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NOTES

FROM THE

ROYAL BOTANIC GARDEN, EDINBURGH.

VOL. XIV.

Including Numbers LXVI-LXX.

1923-1924.

With Plates CLXXX-CXCVIII, and Six Figures in the Text.

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NOTES

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Regional Spread of Moisture in the Wood of Trees. III.

BY

WILLIAM GRANT CRAIB, M.A.,
Regius Professor of Botany in the University of Aberdeen.

With Plates CLXXX–CXC.

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I. Deciduous-Leaved Trees during the Period late Autumn to Early Spring (Contd.).

An earlier paper* summarised the results of experiments on the moisture content of the wood of newly felled trees of *Acer Pseudoplatanus* at various times during the leafless period. Up to that time only two species of true heart-wood trees had been examined, viz. *Ulmus montana* and *Quercus cerris*. From the one specimen of each that had then been examined it was possible to say† merely that the results obtained were comparable with those for *Acer* and to suggest that in all probability true heart-wood trees would be found to be similar to *Acer* in their behaviour as regards moisture-spread throughout the entire leafless period.

Subsequently a series of trees of *Ulmus* was examined in exactly the same way as that of *Acer*, the months of felling being October, November, January and March. The general results were exactly as predicted. Moisture storage takes place in the heart-wood in the end of the year and this moisture travels outwards as the season progresses. Slight differences of detail when compared with *Acer* were observed but these in no way affected the general results and in the present state of our knowledge I had decided to limit the *Ulmus* experiments to elucidation of the one broad principle. It is unnecessary to supply the graphs for *Ulmus* as these are in general but repetition of those for *Acer*.

---

* Notes Roy. Bot. Gard. Edin., vol. xi. No. LI. p. 1 (1918); for second paper see ibid, vol. xii. No. LIX. p. 187 (1920).

† Notes Roy. Bot. Gard. Edin. vol. xi. No. LI. p. 13 (1918).

It may be interesting to record one small experiment which although not carried out by a method ensuring absolute accuracy, yet gave rather unexpected results which might be regarded as suggestive of future lines of investigation.

In the case of one of the trees the annual rings were so broad that I decided to split the ring roughly into Spring and Summer wood and to examine these two separately. The result was that the Summer wood contained on an average about 10% more moisture than the Spring wood. This tree was then in the centre-storage condition. Unfortunately no equally broad rings were present in any of the other trees but some were just broad enough to allow of their being split and the result was that the Spring wood showed a decidedly higher moisture-percentage than the Summer wood. Apparently then when the moisture is stored in the centre of the trunk the Summer wood has the higher percentage but when the moisture is moving outwards the Spring wood has the higher. In recording this small experiment I am well aware of the fact that the methods employed do not give results from which satisfactory conclusions can be drawn. No account has been taken, for example, of the difference in specific gravity between the earlier and the later formed wood of the year. In spite of this I think the results may be worthy of record.*

II. Deciduous-Leaved Trees during the Leaf-bearing Period.

From the condition of the last graph published† to the summer condition with, as I presumed, a large central comparatively dry area, the transition would seem easy. It was legitimate to imagine the large percentage of moisture just inside the cambium in March as very rich in sugar and as ready to be drafted to the cambium at its own level or higher up. The exhaustion of this store, rapid owing to the tree's spring growth activities, would result in the summer condition as presumed. The process is however no such simple one.

This paper is a continuation of that already published‡ and gives the results obtained from the following trees of *Acer Pseudoplatanus* :—

1. Tree felled entire on the morning of 23rd April 1918. At this time the buds were just open and a few leaves here and there were showing. Growth had not yet begun on the trunk but the

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* Notes on decidous Coniferae will be found under Coniferae.

† Notes Roy. Bot. Gard. Edin., vol. xi. No. LI. Pl. CLIX (1918).

‡ Notes Roy. Bot. Gard. Edin., vol. xi. No. LI. p. 1 (1918).

cambium throughout was decidedly swollen and "bark" was easily separable. Growth had begun on two year old twigs where a row of spring vessels was fully formed.

This tree was not a satisfactory specimen as it showed very slow diameter growth compared with neighbouring trees of the same age and subsequently in chipping up the cuts it was observed that the pith was discoloured all through the bole and well up into the crown and also that in the centre of the lowermost cut a small area of wood was discoloured. The unexpected results obtained might have been due to this diseased condition and it was resolved to examine another tree which appeared quite healthy.

2. Tree felled entire on the morning of 7th May 1918, when practically all the buds were open but only a few leaves here and there were expanded, i.e. this tree was almost in the same condition as the April one as regards its buds. The results obtained confirmed those of the April tree.

3. Tree felled entire on the morning of 14th May 1918 when the first leaves were all just fully expanded.

4. Tree felled entire on the morning of 20th August 1918.

These four trees represent two phases—distinct in the tree's activities and very distinct in the results :—

a. Bud opening and expanding phase as represented by the April and May trees.

b. Full leaf condition as represented by the August tree.

These two fall to be treated separately.

a. April and May.

As already indicated the results obtained from these trees were quite unexpected. Buds from the March tree opened three days* after felling. Yet owing to a prolonged cold spell I had to wait from 23rd March to 23rd April before a tree showing the opening bud condition was available. This interval was so long that results which I here refer to from the April tree as representing the bud-opening condition may in reality be the state of affairs in a tree with the buds just ready to burst, i.e. the moisture distribution as published for the March tree† may not be the final stage in the closed bud condition. Further experiments alone can settle this point. But however that may be we can still discuss the March and April results as *a* closed-bud condition and *the* bud-opening condition respectively.

The most striking result obtained from this series is the position in the lowermost cuts of the area of maximum moisture content in the case of the April and the first May trees (Plates CLXXXII–CLXXXIII). Here we find the moisture heaped up

* Notes Roy. Bot. Gard. Edin., xi. No. LI. p. 9 (1918).

† Notes Roy. Bot. Gard. Edin., xi. No. LI. Pl. CLIX (1918).

towards the centre—exactly the reverse of the March condition and further in the first May tree we have in the bottom cut a return of the three-wave graph. In short, comparison of the graphs of the bottom cuts for the first May tree (Pl. CLXXXIII) and the January tree (Pl. CLVII) shows that they are practically identical. Nor does the similarity of the results obtained from these two trees end here. There is a general resemblance throughout all the results as plotted for these two trees.

Again, the second May tree shows results (Pl. CLXXXIV) comparable with those of the March tree (Pl. CLIX) but on a much smaller scale. Here there is once more the maximum moisture percentage almost on the outside, though that maximum is very much smaller than in March. Since then the first May tree resembles so closely the January tree in its moisture distribution and the second May tree is comparable with the March tree, one may legitimately ask whether in the interval April-May (?March-May) the moisture does not go through the same movements on a reduced scale and at greatly accelerated speed as in the longer interval October-March.

Again in the second May tree (Pl. CLXXXIV) there is in the uppermost two cuts a decided increase in moisture percentage towards the outside. This increased percentage is correlated with the fact that here growth has now commenced.

The time relationship of bud-opening and the commencement of diameter increase is not the same for all trees. In the trees of *Acer Pseudoplatanus* examined growth began at the twigs when the buds were still closed, extended back along the branches to the trunk and reached a little way down the trunk only after the leaves were fully expanded. This was not the case in a specimen of *Quercus pedunculata* felled in May when only at the top of the tree a few male inflorescences were showing and when not a single leaf was to be seen on the tree. Here a row of new spring vessels was already formed throughout the bole. In *Acer Pseudoplanatus* new wood was formed on the trunk only after leaf-expansion; in *Quercus pedunculata* new wood was present throughout the trunk before the buds had burst.

b. Full-Leaf Condition, August (Pl. CLXXXV).

Interpretation here presents practically no difficulty. The transpiration current is represented by the higher percentages in the youngest wood and throughout most of the tree the whole central area has an almost uniform percentage averaging but slightly over 60. Probably in a tree of uniform growth the graph, excluding the transpiration current, would be a straight line.*

---

* For deciduous Coniferae see under Coniferae.

These results and their bearing on the tree-felling period are referred to under Coniferae.

III. **Evergreen Broad-Leaved Trees** (Plates CLXXXVI-CLXXXVII).

The experiments proposed on evergreen broad-leaved trees were unfortunately interrupted and of the series of *Ilex Aquifolium* selected for examination only two trees were felled, one on 5th December 1918 and the second on 15th February 1919. From an examination and comparison of the graphs of the moisture-distribution of these two trees, however, one may conclude :—

1. That in the Holly moisture is stored in the centre. This is shown in the graph of bottom cut of the December tree (Plate CLXXXVI) where moisture is stored in the heart-wood.
2. That later in the season the moisture spreads from the centre as shown by the low moisture-percentage of the heart-wood in February (Plate CLXXXVII).
3. That the movement is much slower than in the case of *Acer* or *Ulmus* and also that the storage is apparently on a much smaller scale as evidenced by the lower range of percentages.

IV. **Coniferae** (Plates CLXXXI, CLXXXVIII-CLXXXIX).

Amongst the Conifers the deciduous and evergreen habit apparently makes no difference with regard to moisture-spread, but there is a very great difference between the resinous and non-resinous genera.

Of the resinous trees, species of *Pinus, Larix, Chamaecyparis* and *Cedrus* have been examined and in no case is there storage of moisture in the heart-wood.* The impregnation of the walls with resin renders the passage of moisture from the sap-wood to the heart-wood impossible. Hence we have in these resinous trees throughout the year a condition approximating to the August *Acer,* i.e. in mature trees a large dry heart-wood area surrounded by the narrow wet zone of sap-wood.

A typical moisture distribution graph for a resinous Conifer is given on Plate CLXXXVIII (*Chamaecyparis pisifera,* felled 22nd Oct. 1918). The sap-wood gives very high percentages and there is a very sudden drop on entering the heart-wood.

---

* F. M. Oliphant (apud Sir Hugh Stewart in Trans. Roy. Bot. Scot. Arb. Soc. vol. xxxv. p. 67) suggests that a comparison may be drawn between the regional moisture contents of *Picea sitchensis* and *Acer Pseudoplatanus.* So far as my observations have gone one cannot compare the moisture distribution in the groups to which these two species belong. Of the several examples of resinous conifers examined at different seasons none with central storage comparable with that of *Acer* has been found. There has been here and there a slight rise in moisture-percentage towards or at the centre of the heart-wood but so slight and at times so inconstant as to appear negligible when compared with the central storage condition of *Acer.*

This fact shows quite conclusively that moisture distribution is not the determining factor in the selection of the optimum felling period. For, granted that winter is the period for resinous conifer felling, then the season in broad-leaved trees with a similar moisture distribution is that of the full-leaf condition.

As stated in the earlier paper* other factors must be considered before a decision on the optimum-felling season can be given. But in the meantime the results from the *Acer* tree suggest a method of felling when the tree is in full leaf which might at least be given a trial. The present practice is to cut off all branches almost immediately after the tree is felled. Instead of this let a tree be felled say in August and let the branches be left on until the leaves have flagged and are no longer transpiring. The result would be that the leaves would transpire the bulk of the water in the younger wood and we would have a trunk with, in the case of *Acer*, an almost uniform 60% of moisture throughout.

Non-resinous Conifers have been represented in the experiments by *Taxus*, and in *Taxus* there are two points to be noted.

There is here storage of moisture in the heart-wood. In this respect *Taxus* behaves as the broad-leaved trees, or I should say apparently so because the experiments were interrupted before the summer condition was examined. The winter condition, however, is on the same lines as that of the broad-leaved trees.

In *Taxus* there was noted a peculiarity not present in any of the other trees examined. In the cross section of the newly felled tree, three distinct areas can be recognised—central heart-wood, sap-wood on periphery, and separating these two areas a narrow zone of very pale wood (Plate CLXXXI). A very superficial examination sufficed to show that this narrow pale zone was much drier than either the heart-wood or the sap-wood and the final drying of the chips served but to emphasize the difference.

The position of this dry pale-coloured zone immediately external to the heart-wood suggested that it was some intermediate stage or the primary stage of the conversion of the sap-wood into heart-wood. To test the validity of this conclusion reagents were employed to find out the distribution of tannin in this zone and in the neighbouring heart-wood and sap-wood.

Five tannin tests were used :—Osmic Acid + Hydrochloric Acid ; Ammonium molybdate in Ammonium chloride solution ; Ferric chloride in Ether ; Potassium dichromate ; and Ammonium chloride.

Heart-wood responded readily to the various tests as also did the half of the white zone next to the heart-wood, but the white zone gave no reaction in the part next to the sap-wood. These tests showing the distribution of the tannin served to confirm the supposition that this white zone is sap-wood in process of conversion into heart-wood by the extraction of moisture of imbibition followed by impregnation of the walls with tannin.

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* Notes Roy. Bot. Gard. Edin., vol. xi. No. LI. p. 12.

Further, microscopic sections showed that the tannin is actually in the walls of the tracheids, that there is no trace of tannin in the medullary ray cells and that the medullary ray cells are living in the white band. Thus a means of communication is still open through the medullary rays from sap-wood to heart-wood even supposing the impregnation of the tracheid walls with tannin were to act as resin in preventing diffusion through the walls.

Plate CLXXXIX gives the moisture distribution in *Taxus baccata* in November, showing the high moisture-percentage of the sap-wood, the sudden dip owing to the low moisture-percentage of the white band and the rise in percentage on entering the heart-wood.

The coloured plate (CLXXXI) is a reproduction of a painting made from the newly felled wood of this tree to show the conspicuous white band separating the heart-wood and sap-wood.

V. Wind as an Agent in Moisture-Spread (Plate CXC).

That wind is a very effective agent in the raising of the sap in trees is a well-known fact but in the accompanying graph the results of a gale are shown to be not only sap-raising; there is in addition a disturbing of the sap-distribution equilibrium.

The tree examined was a specimen of *Populus trichocarpa* which was blown down during a severe gale on the early morning of 1st March 1918. The results probably do not give the maximum effects of the gale as, not suspecting any such disturbance of the moisture distribution, I treated the tree in an exactly similar way to that adopted for the other trees examined, i.e. by determining the moisture-distribution in strips from north to south and east to west through the centre. Fortunately, however, the gale was from only slightly east of north so that the maximum results shown in the graph are those from north to south.

Without attempting a physical explanation of the results I would simply draw attention to the increasing percentage in the youngest wood as we ascend the tree on the side on which the gale was blowing, to the decreasing percentage in the youngest wood on the side away from the gale, and to the great contrast in the percentages of these two sides.

It must be borne in mind that in such a tree as *Populus trichocarpa* with its elasticity we would find a maximum moisture disturbance. In less flexible trees such as *Quercus* or *Platanus* the result of a gale would probably be very much smaller.

One other point must be noted. The graphs show a comparatively high moisture-percentage in the centre of the trunk. How far this is a result of the gale I cannot say as the whole series of experiments on moisture-spread was interrupted before another *Populus* could be examined to elucidate this point.

The absence of a graph for the bottom cut in the N S direction is explained by the fact that the tree was not quite sound on the north side at the point selected for the cut.

For the material on which the previous and present papers are based I am indebted to the late Sir I. B. Balfour. Not for the material alone, but also for his encouragement throughout the lengthy and laborious experiments and for his friendly advice and criticism I wish now to express my sincere gratitude. Mr R. L. Harrow, F.R.H.S., Head Gardener, Royal Botanic Garden, as before, arranged and saw to the carrying out of the details of the felling operations in a very satisfactory way. For the original painting of the wood of *Taxus* I am indebted to Miss L. Snelling.

LIST OF PLATES* (CLXXX-CXC).

Illustrating Professor Craib's Paper on Moisture-Spread.

PLATE CLXXX.—Average moisture distribution in bole of *Acer Pseudoplatanus* in August.
CLXXXI.—Transverse and longitudinal sections of newly felled wood of *Taxus baccata* showing heart-wood and sap-wood.
CLXXXII.—Moisture distribution throughout the trunk of *Acer Pseudoplatanus* in April.
CLXXXIII.— Do. do. do. do. in May (1).
CLXXXIV.— Do. do. do. do. in May (2).
CLXXXV.— Do. do. do. do. in August.
CLXXXVI.—Moisture distribution throughout the trunk of *Ilex Aquifolium* in December.
CLXXXVII.— Do. do. do. do. in February.
CLXXXVIII.—Moisture distribution throughout the trunk of *Chamaecyparis pisifera* in October.
CLXXXIX.—Moisture distribution throughout the trunk of *Taxus baccata* in November.
CXC.—Moisture distribution throughout the trunk of wind-blown *Populus trichocarpa*.

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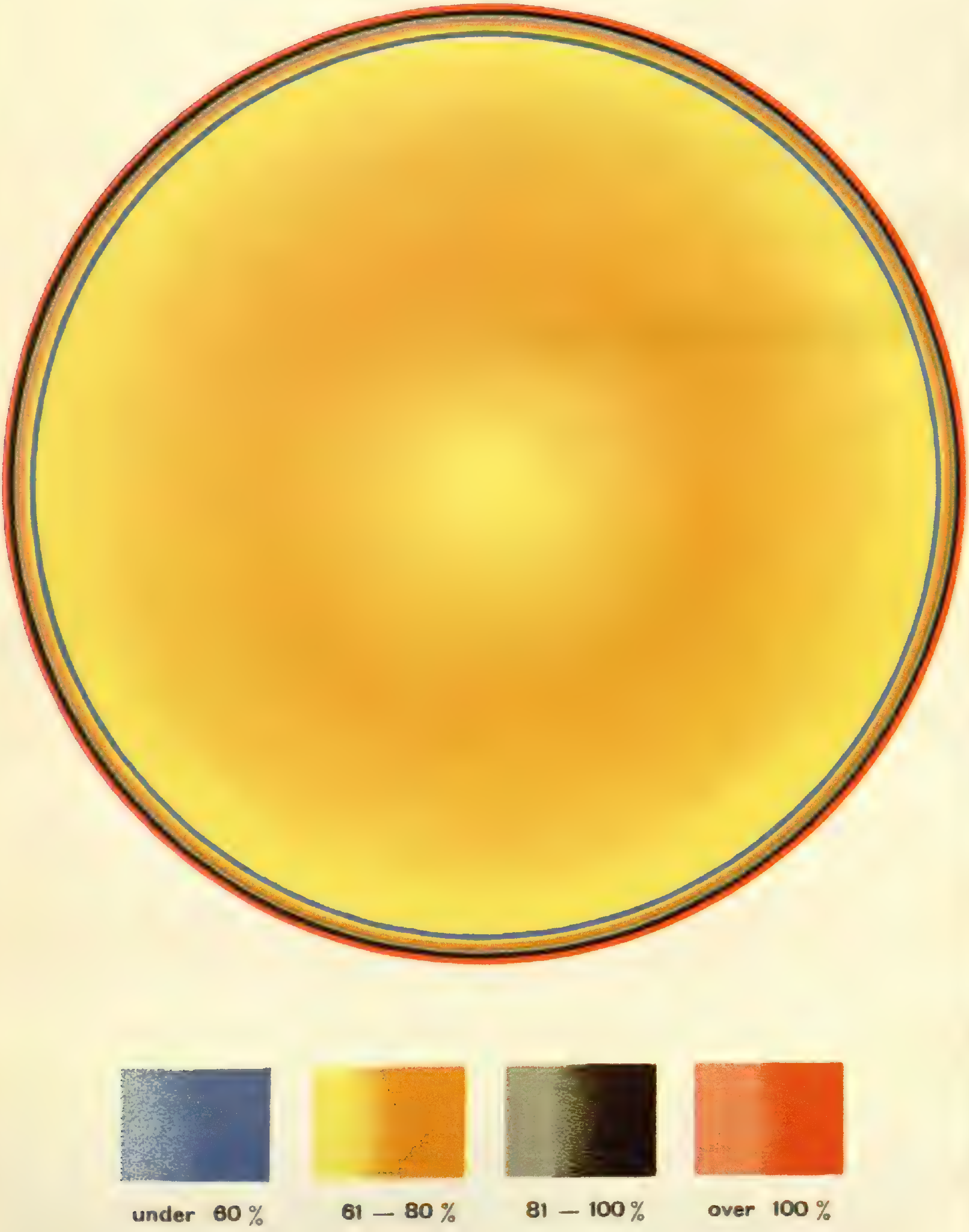
* For explanation of methods adopted in these plates see previous paper published in Notes Roy. Bot. Gard. Edin., vol. xi. No. LI.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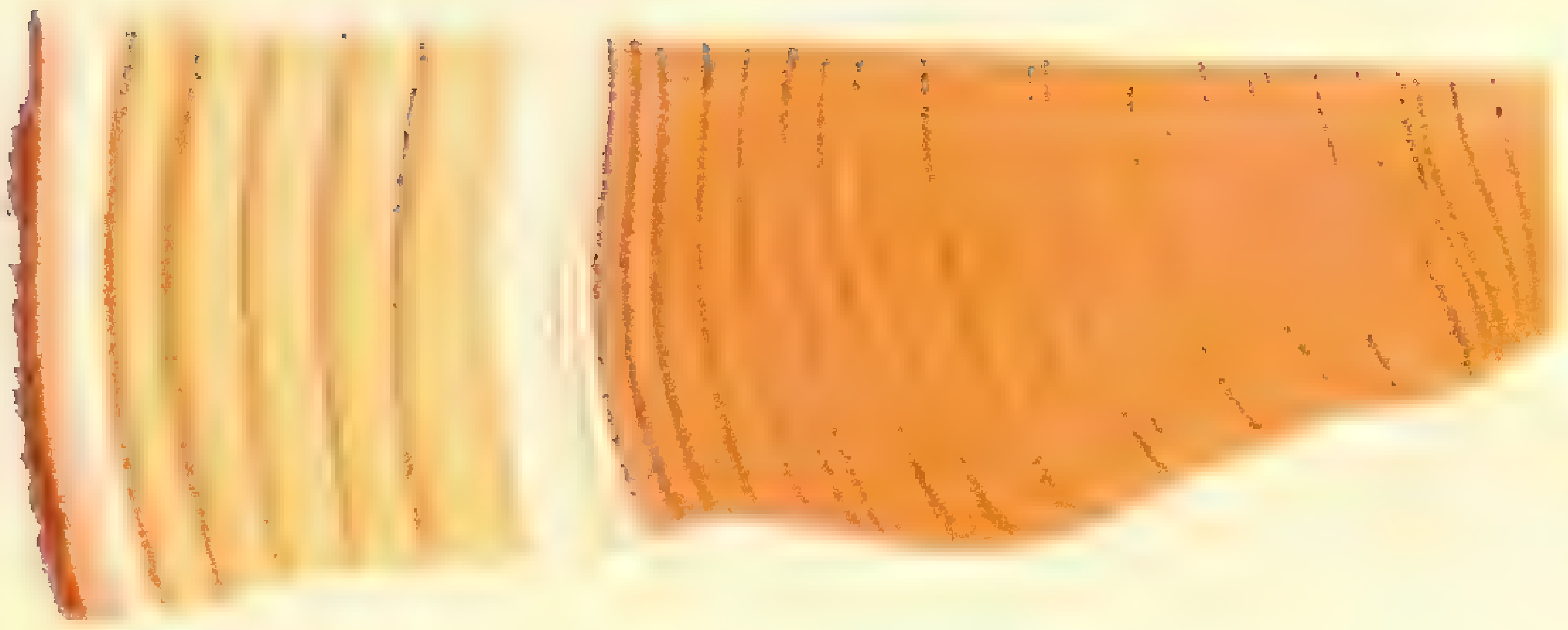
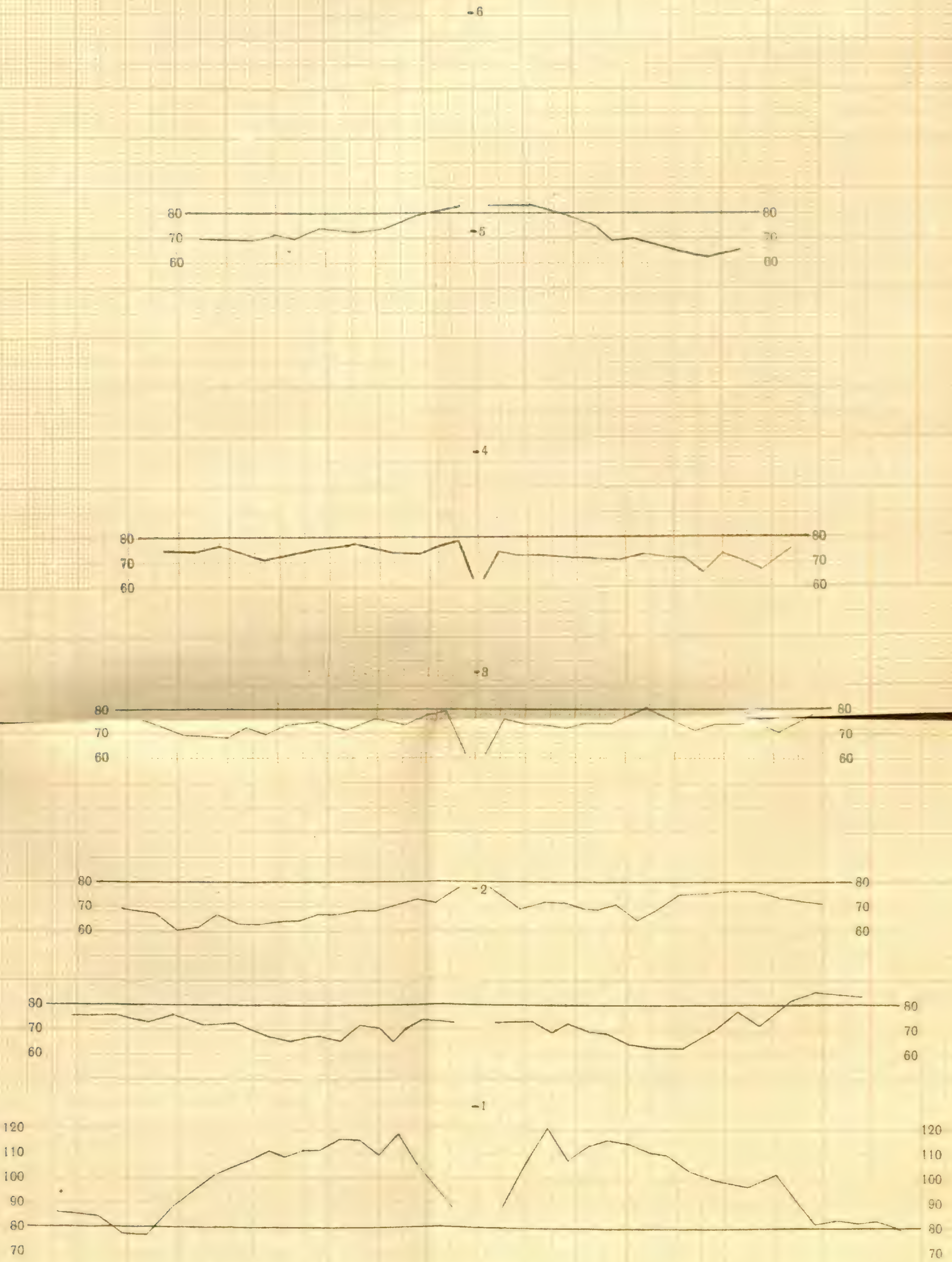


Plate CLXXXII.
Acer (April)



ACER (MAY 1)

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PLATE CLXXXIV.

ACER (MAY 2)

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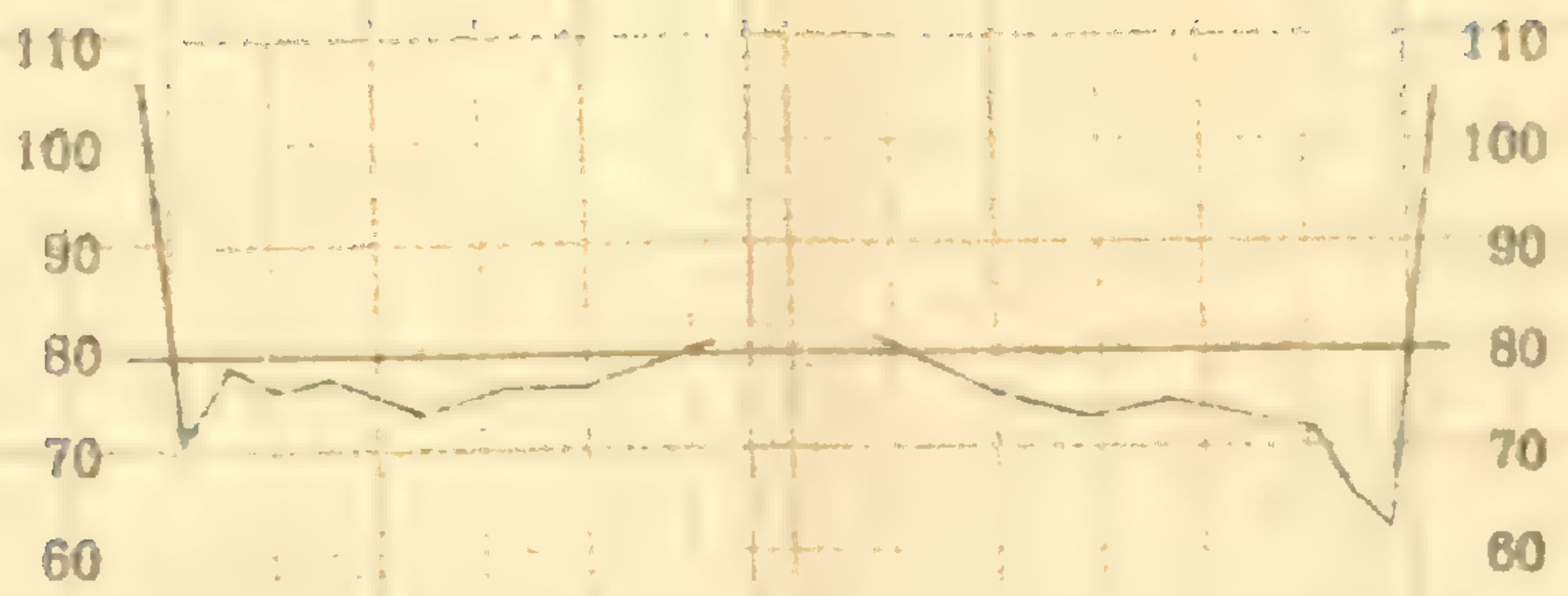
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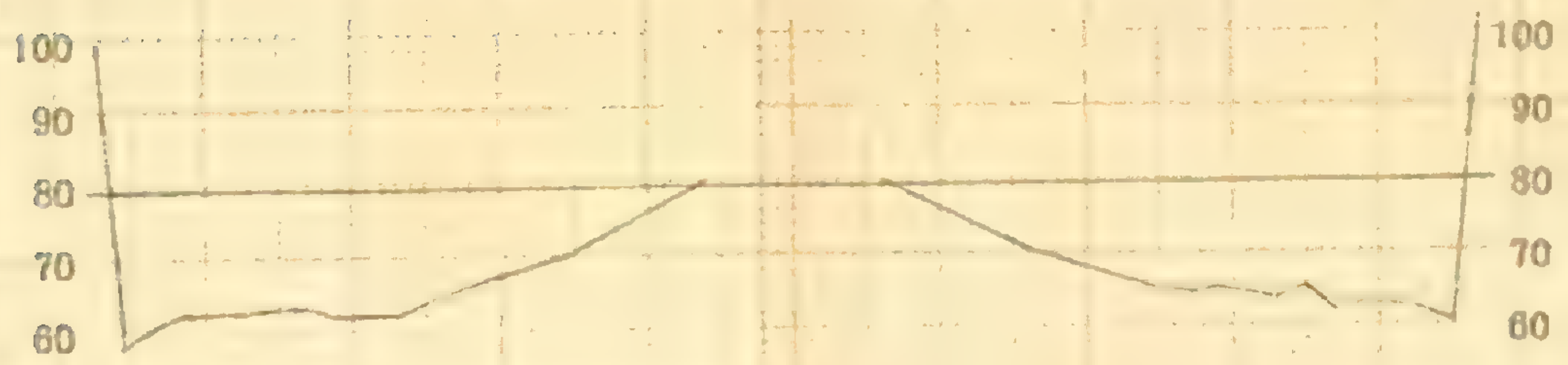
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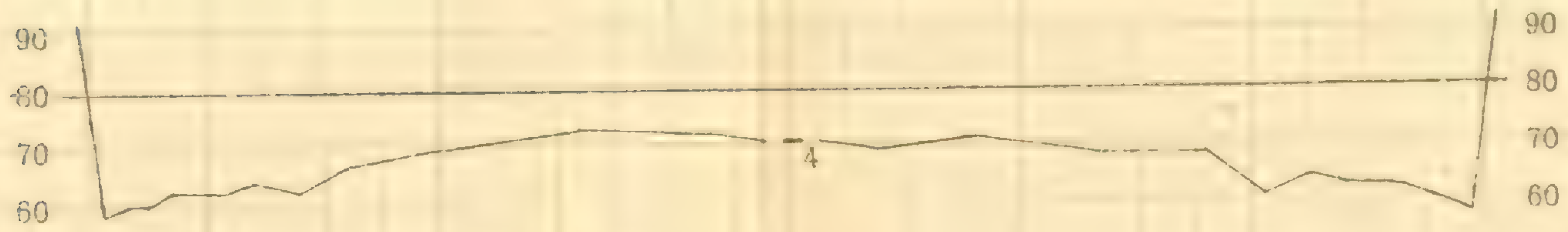
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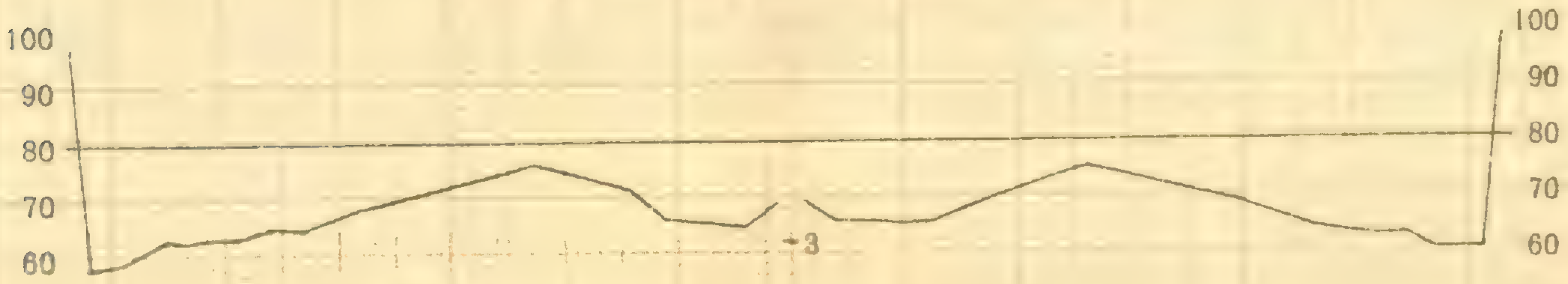
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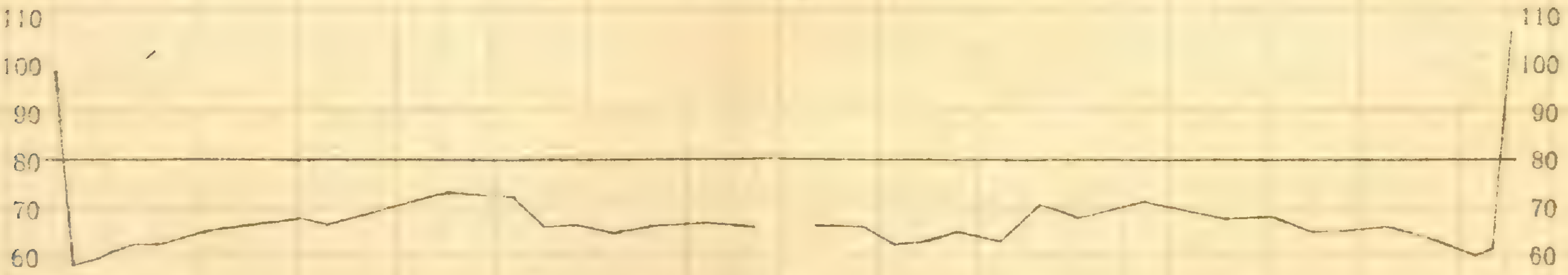
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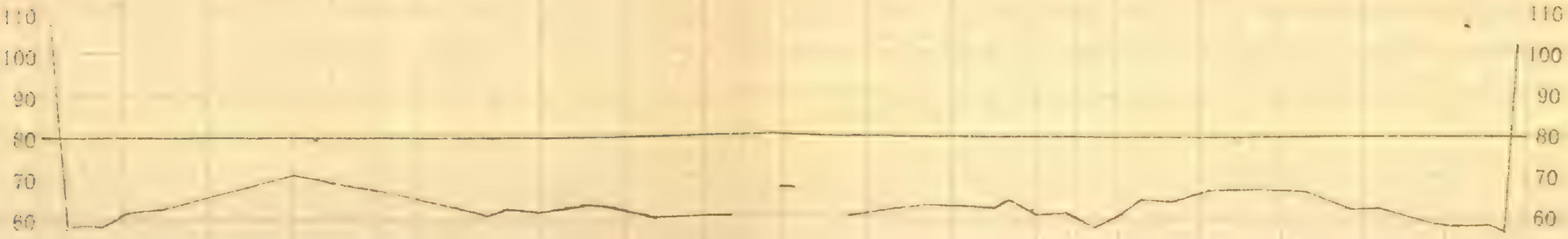
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PLATE CLXXXVI.

ILEX (Dec.)

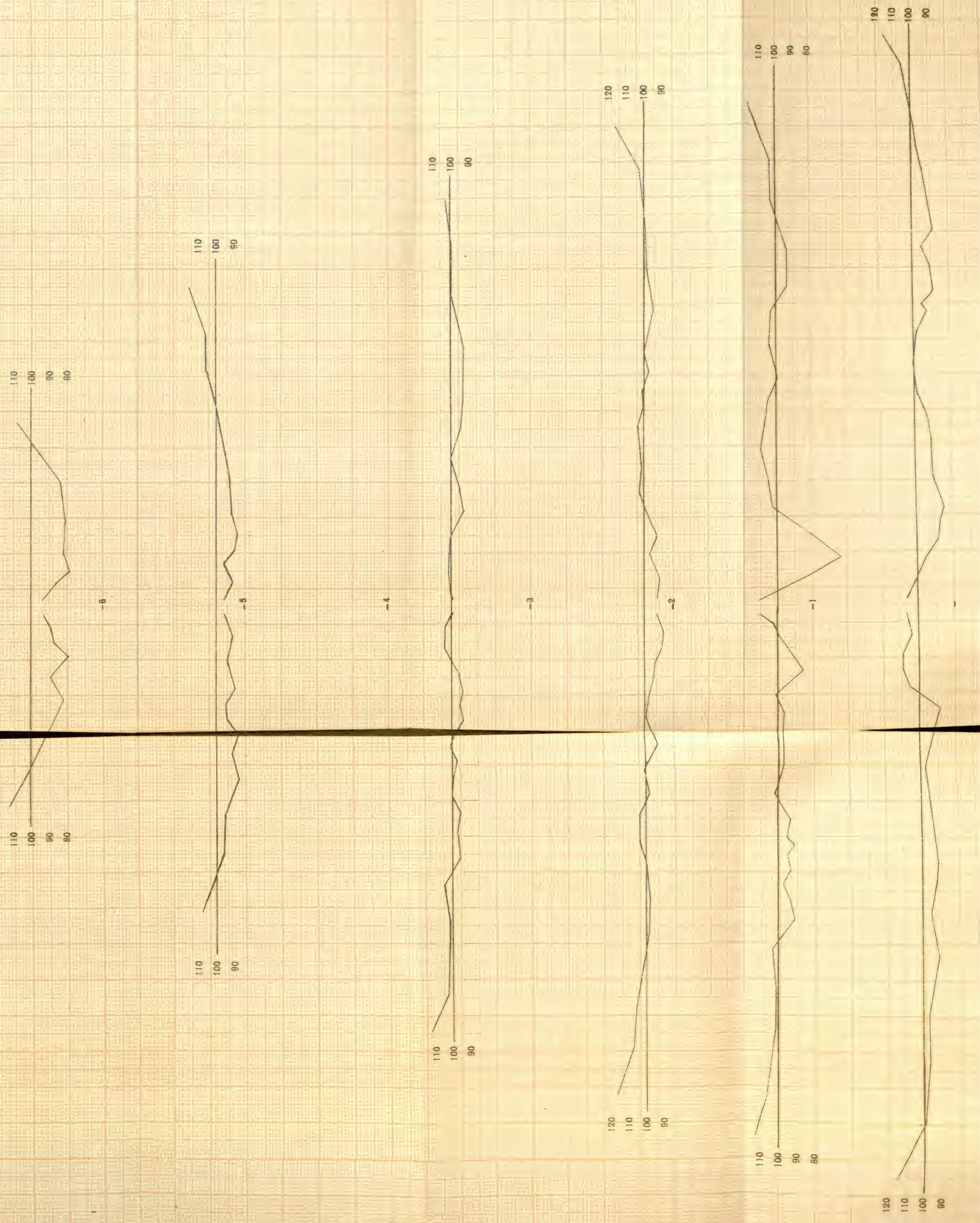

PLATE CLXXXVII.

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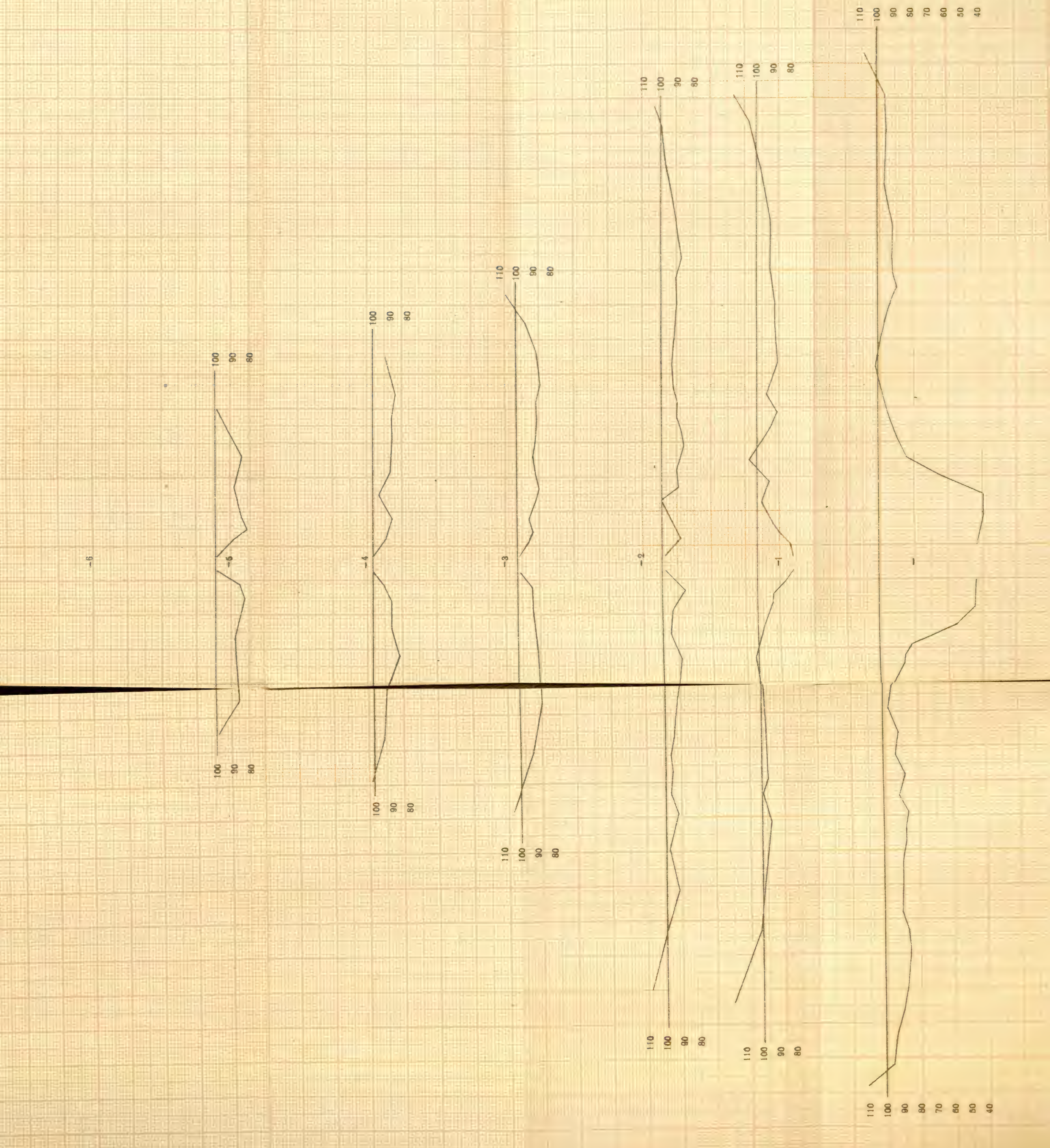
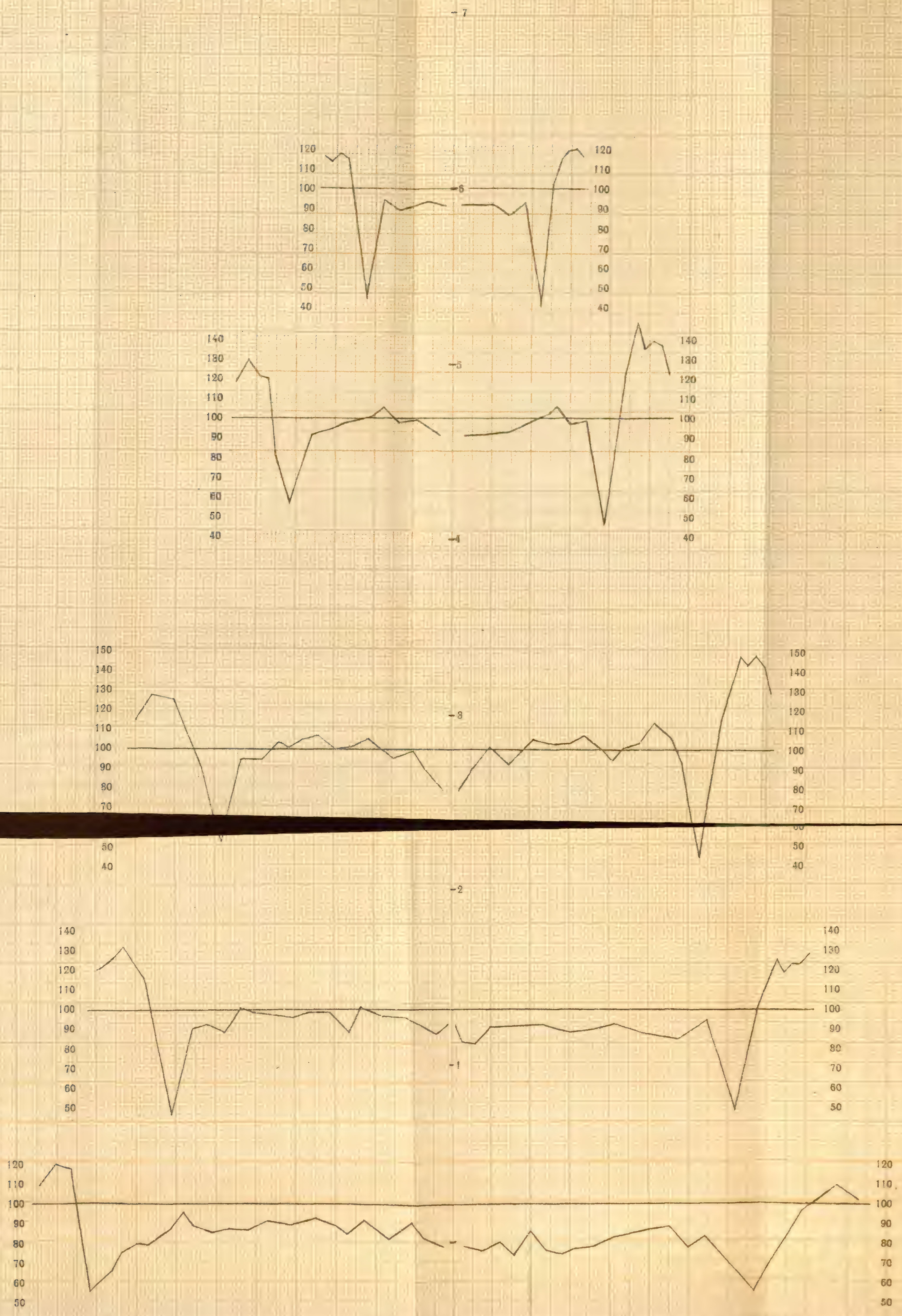
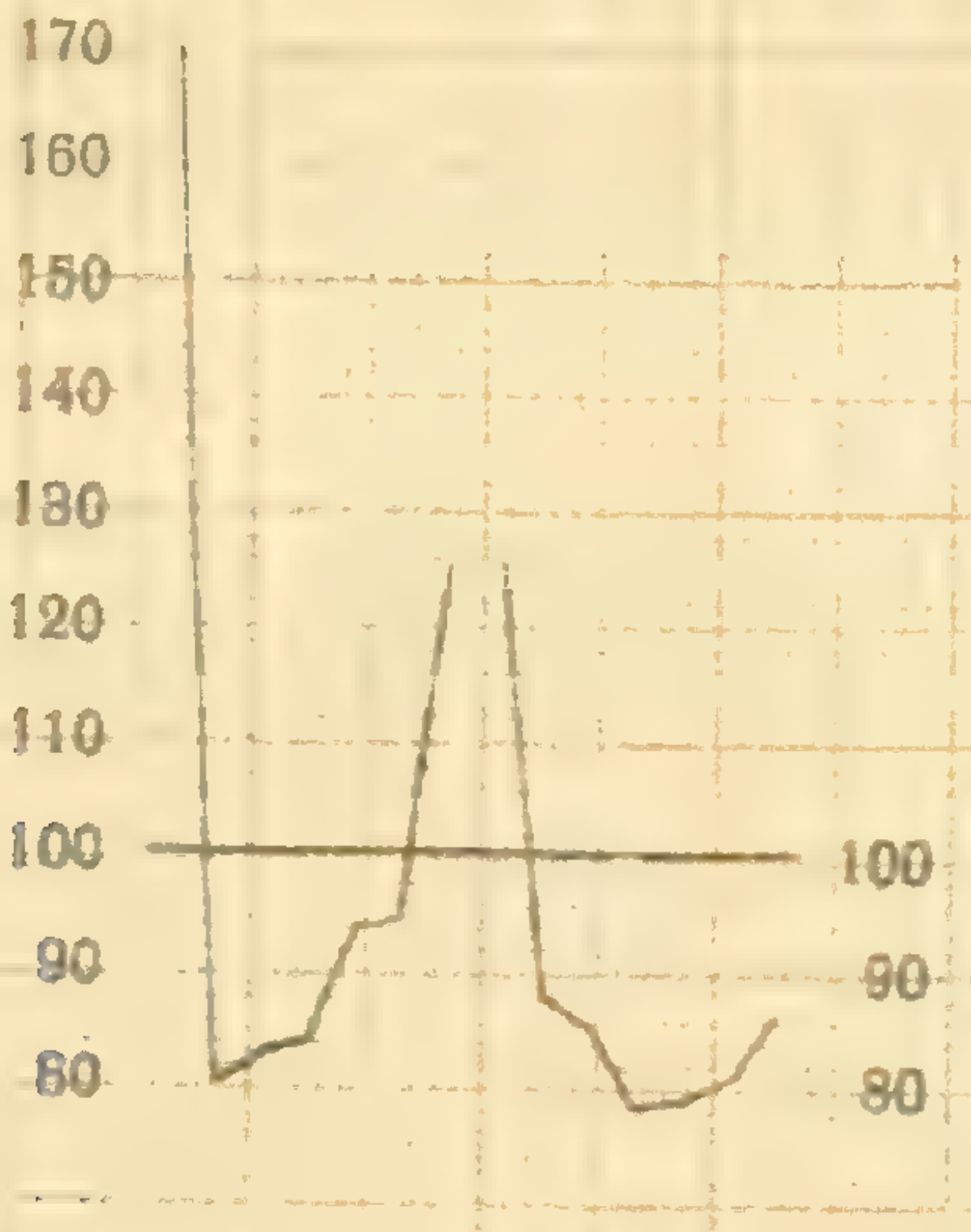


PLATE CLXXXVIII.

CHAMAECYPARIS

PLATE CLXXXIX.
TAXUS





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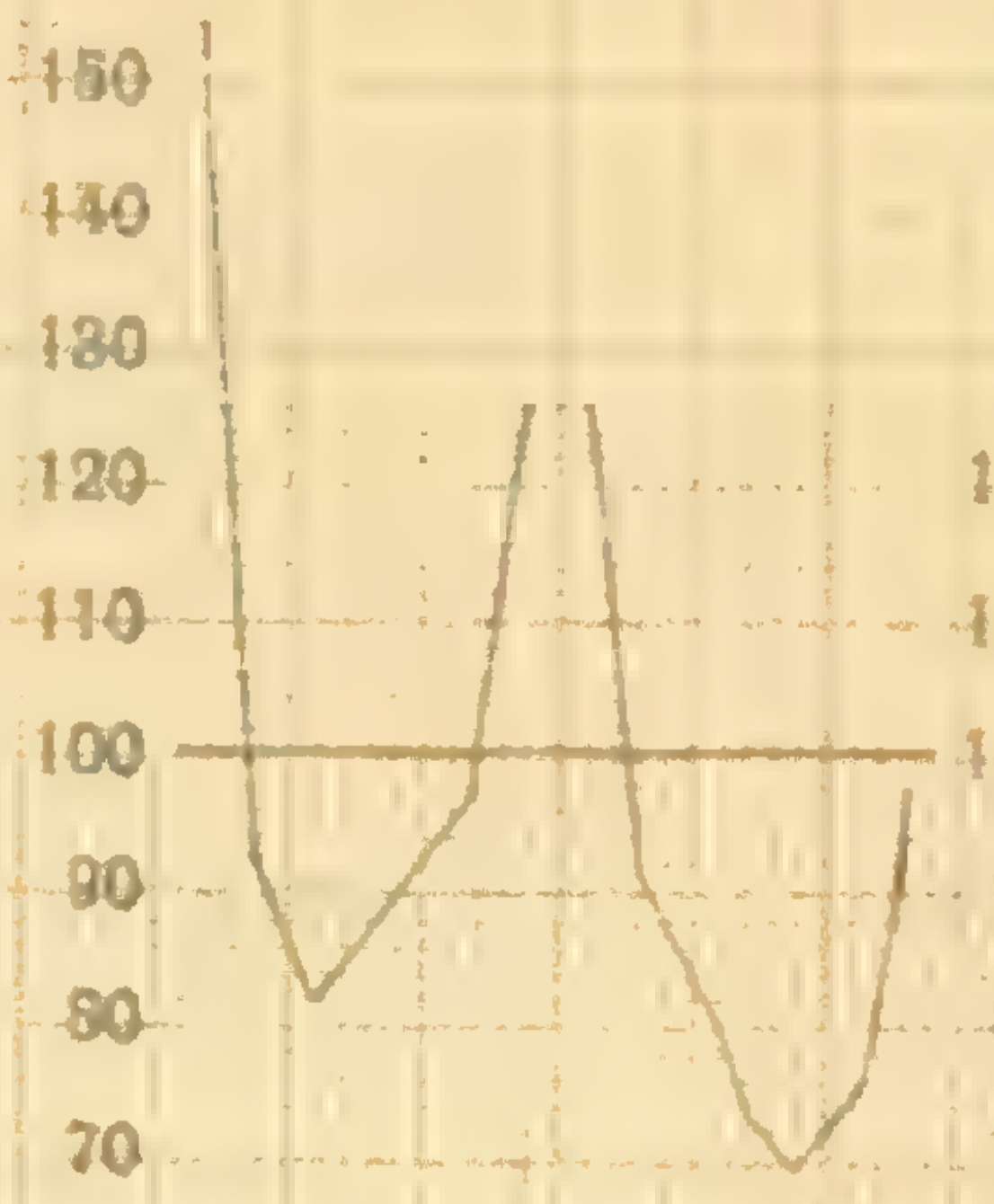

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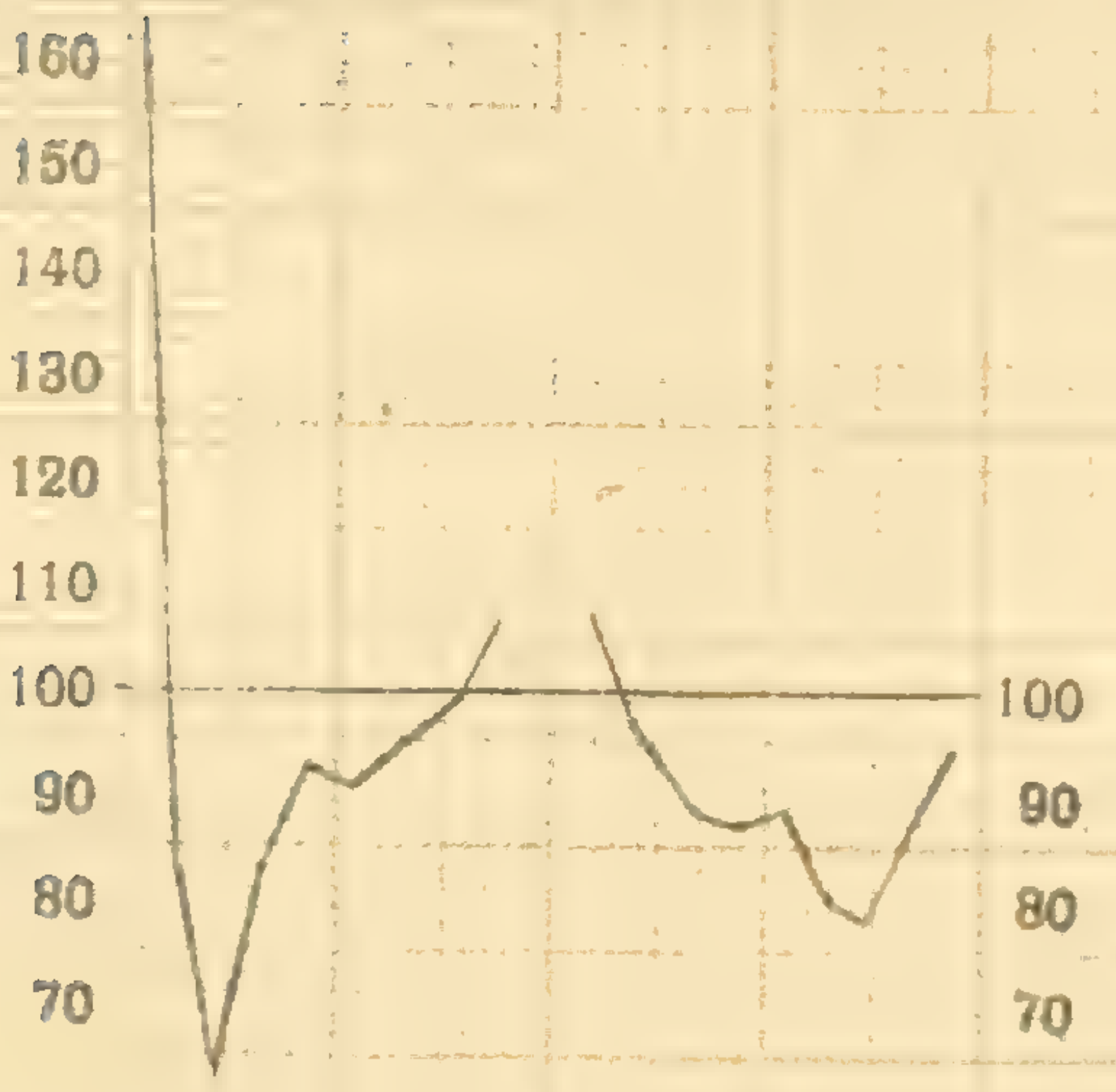

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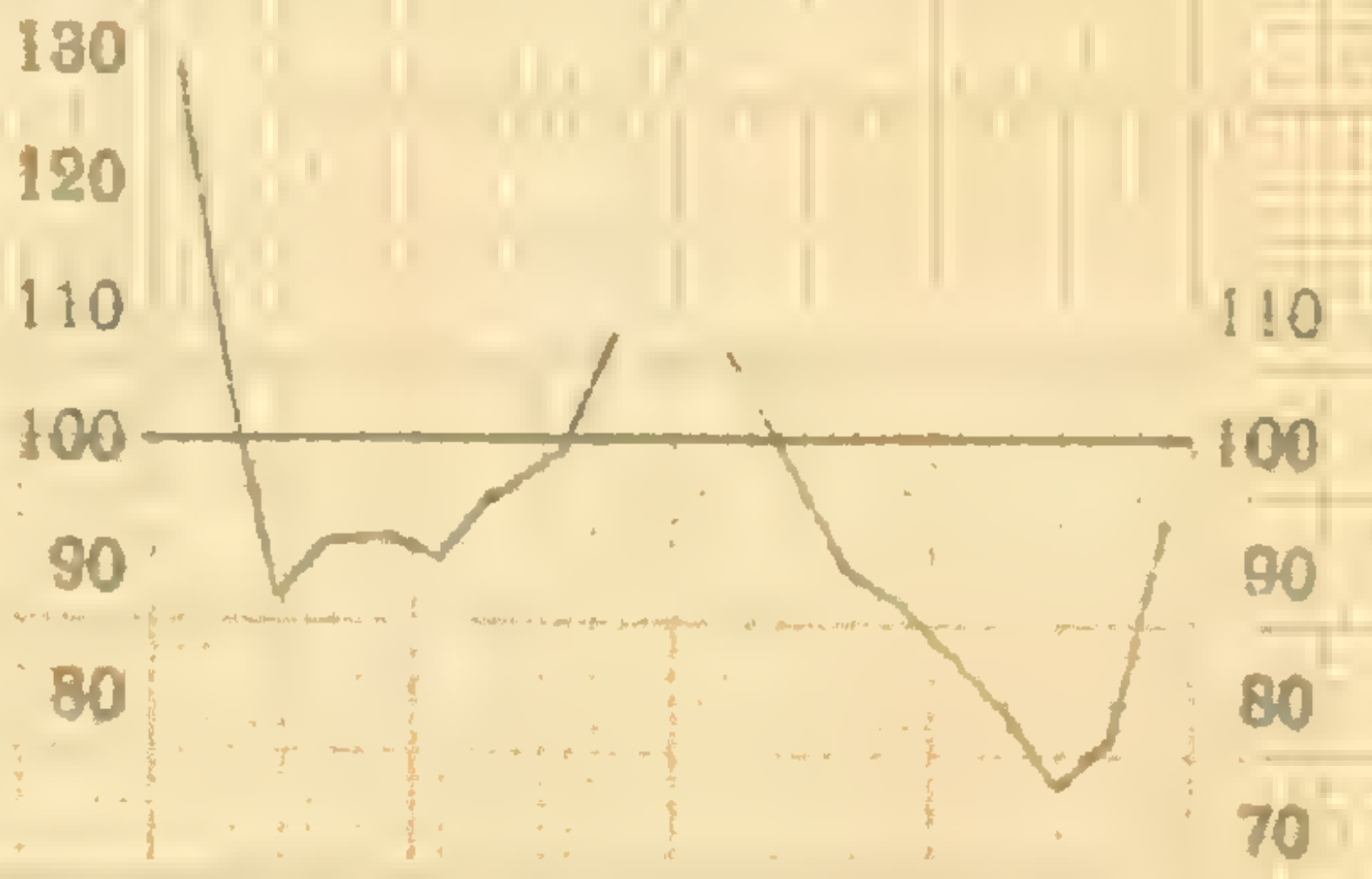

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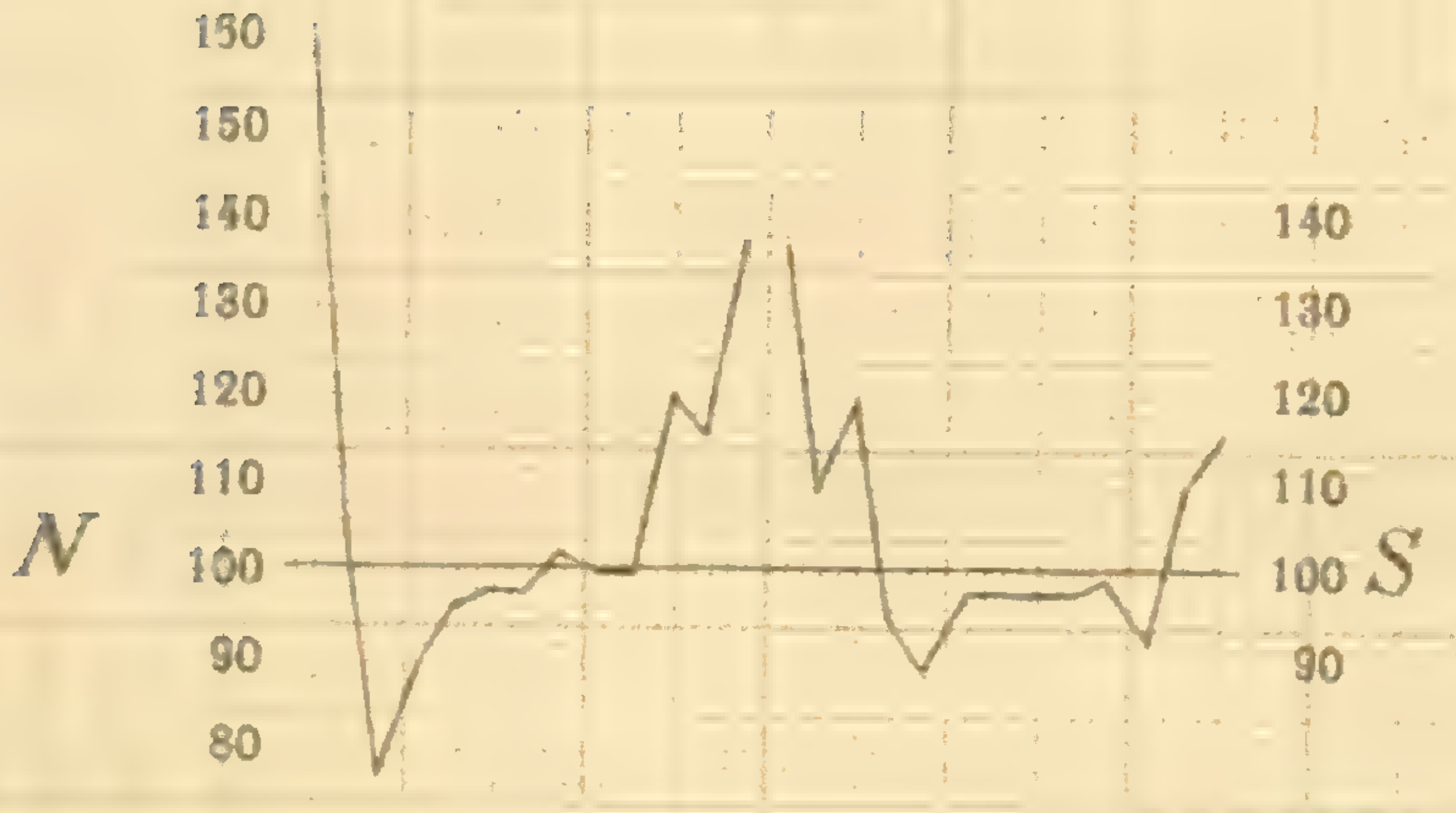

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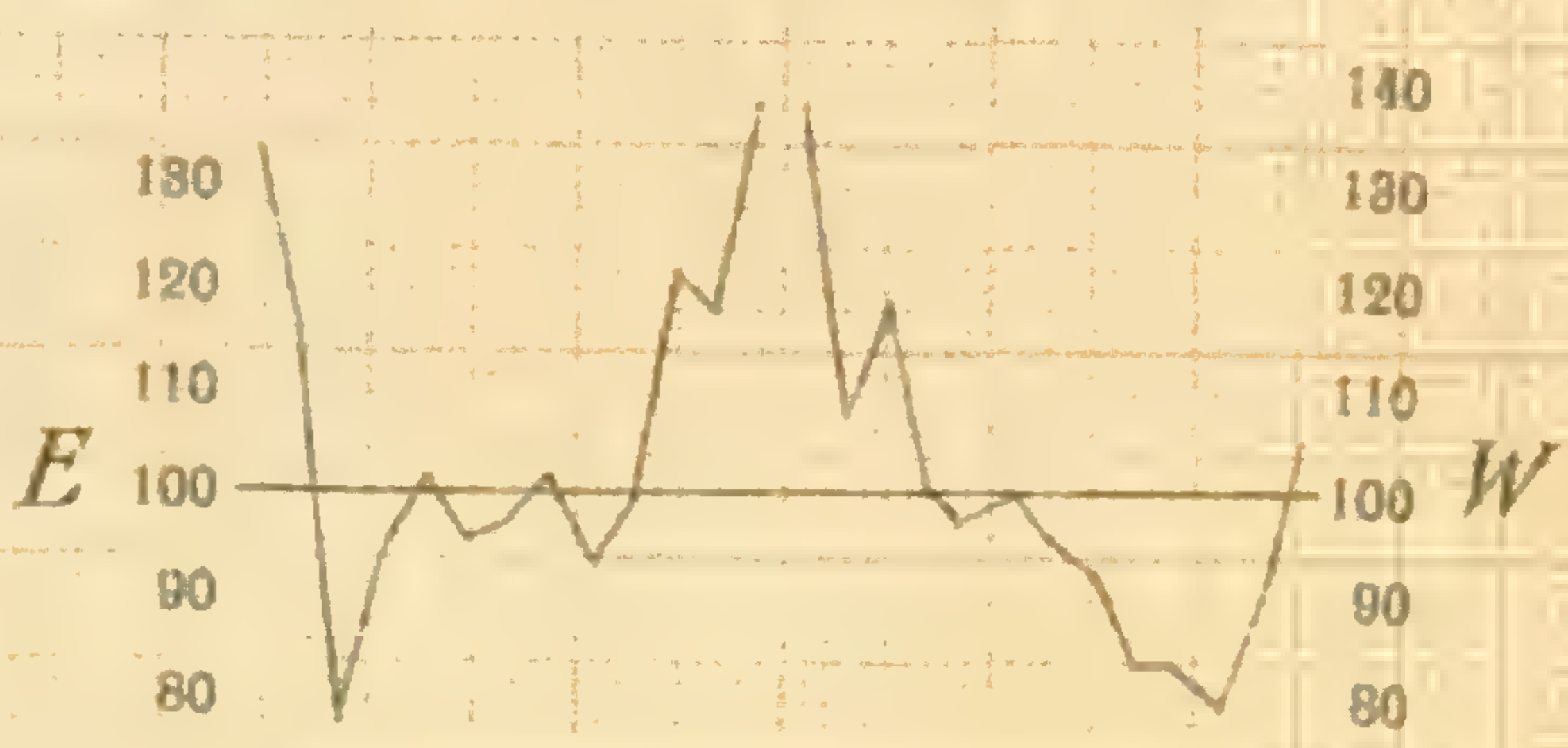

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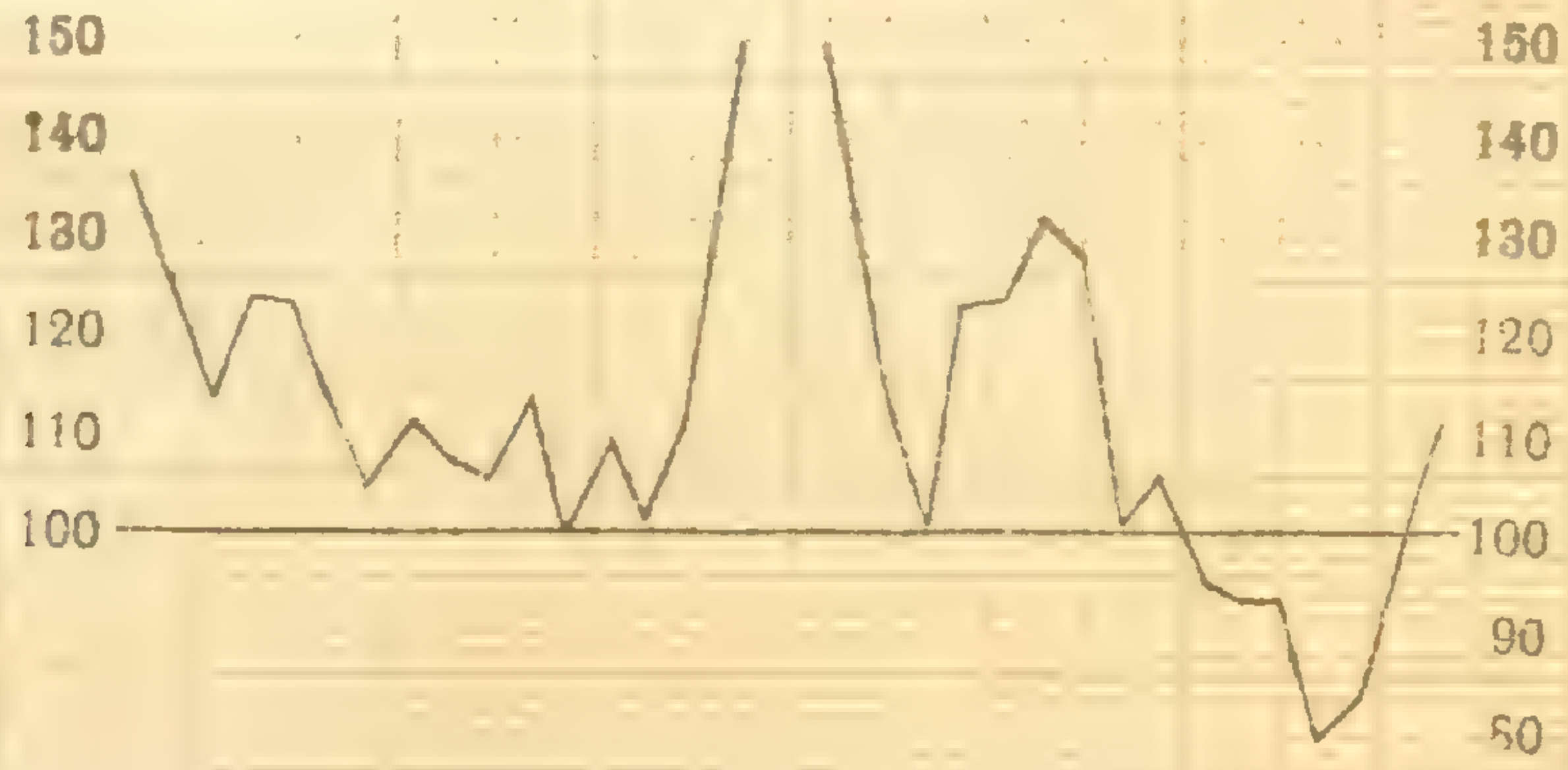

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The Effect of Late Frost on the Wood of Acer Pseudoplatanus, Linn.

BY

JAMES TEMPLETON, B.Sc.
Senior Botanist, Department of Agriculture, Cairo.

With Plates CXCI–CXCIII.

In the course of an investigation of the moisture content of the wood of *Acer Pseudoplatanus*, Linn., a tree was felled in the Royal Botanic Garden, Edinburgh, in March of 1921. Transverse cuts were taken from the bole and crown at measured heights above ground level. A superficial examination revealed the fact that one wood-ring of the lowest cut stood out conspicuously from all the others because of a narrow zone at its inner margin being much lighter in colour than the rest of the wood (Pl. CXCI, Fig. 1a). On the cut surface of the stump, the ring was also very well marked; but 180 cms. above ground level it was in no way different from the normal. A closer examination of this phenomenon gave results which, though in no way connected with the original line of research, appear to be worthy of record.

The annual ring referred to was apparently laid down in the year 1897. On examining transverse and longitudinal sections of it microscopically it became evident that the cambium, from the commencement of its activity in the spring of that year, and for some time later, had acted in a manner far from normal. In Plate CXCII, Fig. 1 shows a transverse section of two consecutive typical annual rings of *Acer*: Fig. 2., of the rings laid down in 1896 (a) and 1897 (b). In Fig. 1, it will be observed that the medullary rays run continuously through the adjacent rings; but in Fig. 2 this is not the case, for the cambium, instead of giving rise to tracheides, vasa, and medullary ray cells, has laid down at the commencement of its activity for the year, several layers of parenchymatous cells with rather thick, lignified walls. A transition from these to normal wood elements—formed later in the year—can be traced, but in no case is there any direct continuation of the medullary rays through the two consecutive rings. Plate CXCII, Fig. 3 and Fig. 4 respectively, show the above rings in longitudinal radial section, and in these the same features are illustrated. It is specially evident from Fig. 4, that an unsuccessful attempt to form vasa was made early in the year, the result being the production at intervals of short columns of large parenchymatous cells, the transverse walls of which have not disappeared (a). Later in the year a further stage in the transition to vasa can be seen, for though the columns of cells are still short, the transverse walls have now disappeared (b). The transition from the parenchymatous cells to tracheides is clearly demonstrated in this figure.

This abnormal behaviour of the cambium appears to be the result of frost injury. In this connection it is interesting to note that, in the Records of the Scottish Meteorological Society for the year 1897,—the year in which the ring was laid down—frost was recorded in Edinburgh on consecutive days, from March 30th to April 6th, and on the 1st of April the ground was covered with snow.

Hartig* found a somewhat similar condition in the wood of several frosted conifers e.g. Pine, Spruce, etc. According to this author, the formation of an ice layer between the cortex and the young wood, results in the crushing and killing of the latter. The medullary rays extend through the ice zone undamaged, and when the ice melts they become extraordinarily broad, since they can expand without any counter pressure. On the inner side of the phloem, the cambium gives rise to parenchymatous tissue, and only eventually in the wood zone is normal wood formed.

In the cases described by Hartig, normal spring wood of the year had been formed before the frost took effect, while in the tree under discussion, the cambial cells, though probably turgid, had not undergone division.

Hartig also states that, in places liable to frost, it is in the under stem portions of coniferous trees, i.e. up to 1–2 metres in height, that these frost rings may be looked for, and it was just in that region of the *Acer* that the phenomenon could be observed.

A transverse cut, containing the abnormal wood-ring, was set aside to dry, and on examination some weeks later, exhibited not only the usual fractures along the medullary rays (Pl. CXCI, Fig. 2a), but also a well defined circular split (Pl. CXCI, Fig. 2b and Fig. 1b).

Tensions are set up in drying timber which result in splitting taking place along the lines of least resistance—usually the medullary rays. In this case the zone of parenchyma also constituted a line of weakness in the wood.

---

* R. Hartig, Lehrbuch der Pflanzenkrankheiten (1900), p. 219.

It is noticeable also that in no case is a radial fracture in the outer portion of the wood in line with one in the inner portion, due, no doubt, to the break in the continuity of the medullary rays previously referred to.

Since the medullary rays are the routes, *par excellence,* along which water and food materials in solution move radially in the wood, the question arises as to whether the passage of these fluids was affected by the interruption of the medullary rays.

It is well known that in Summer, starch is stored in the medullary rays and wood parenchyma, after having been conveyed to these situations in the form of sugar. If the passage of sugar had been restricted, this would be apparent by an examination of the radial distribution of starch. A narrow transverse strip passing through the centre was therefore removed from each cut, and these were placed for some hours in a solution of iodine. The result is shown in Plate CXCIII.* The wood of strips B G is normal, and the maximum amount of starch in each strip, judging from the depth of the stain, is found in the outermost wood-rings, with a gradual diminution towards the centre. In strip A there is a sudden, and very well marked decrease in the amount of starch in the wood within the abnormal wood-ring (a), which indicates, in a very convincing manner, that the inward passage of sugar had been very considerably restricted, and the internal economy of the tree consequently affected.

In conclusion, I wish to express my indebtedness to the late Sir Isaac Bayley Balfour, for placing the material for investigation at my disposal, and to Mr R. L. Harrow, Head Gardener, Royal Botanic Garden, for his care in carrying out the details of felling.

---

* The black areas at b and c are not indicative of presence of starch, but are discolourations in the wood, due to a knot, and decayed pith, respectively.

EXPLANATION OF PLATES (CXCI-CXCIII).

Illustrating Mr Templeton's paper on the Effect of Frost on *Acer Pseudoplatanus*.

PLATE CXCI. Fig. 1.—Block of wood showing abnormal wood ring (a) and split (b).
Fig. 2.—Wood block showing cracks caused by drying.
Fig. 3.—Block split into two portions at the frost ring.

CXCII. Photomicrographs of sections of the wood of *Acer Pseudoplatanus*. × about 75.
Fig. 1.—Normal wood in transverse section.
Fig. 3.—The same, in radial longitudinal section.
Fig. 2.—Abnormal wood in transverse section.
Fig. 4.—The same, in radial longitudinal section.

CXCIII. Wood strips stained with iodine, showing starch distribution at various heights above ground level.

Ground level to A	65 cms.
A–B	225 cms.
B–C	155 cms.
C–D	130 cms.
D–E	100 cms.
E–F	85 cms.
F–G	70 cms.
G to top of leader	230 cms.

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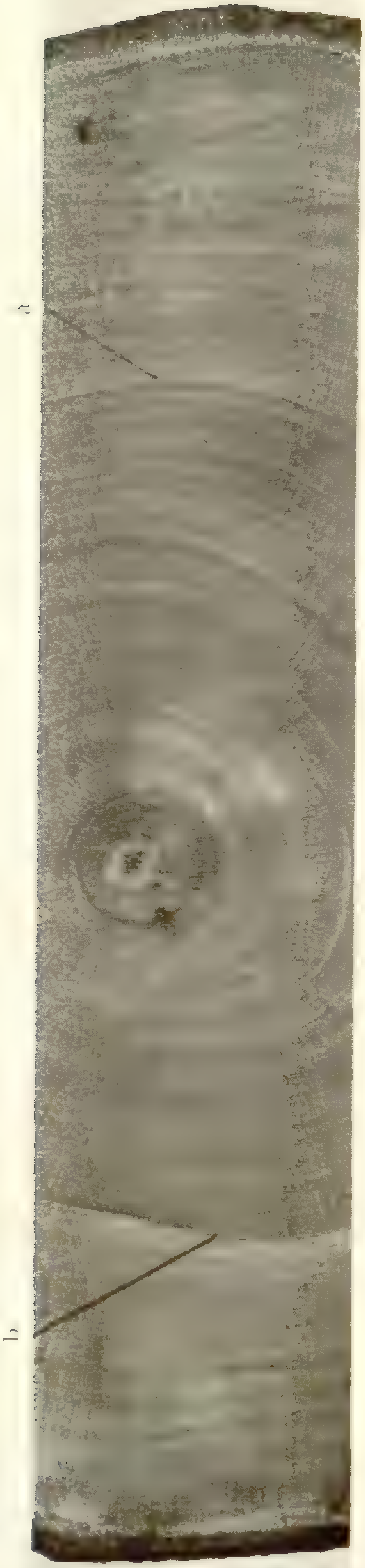


Fig. 1.

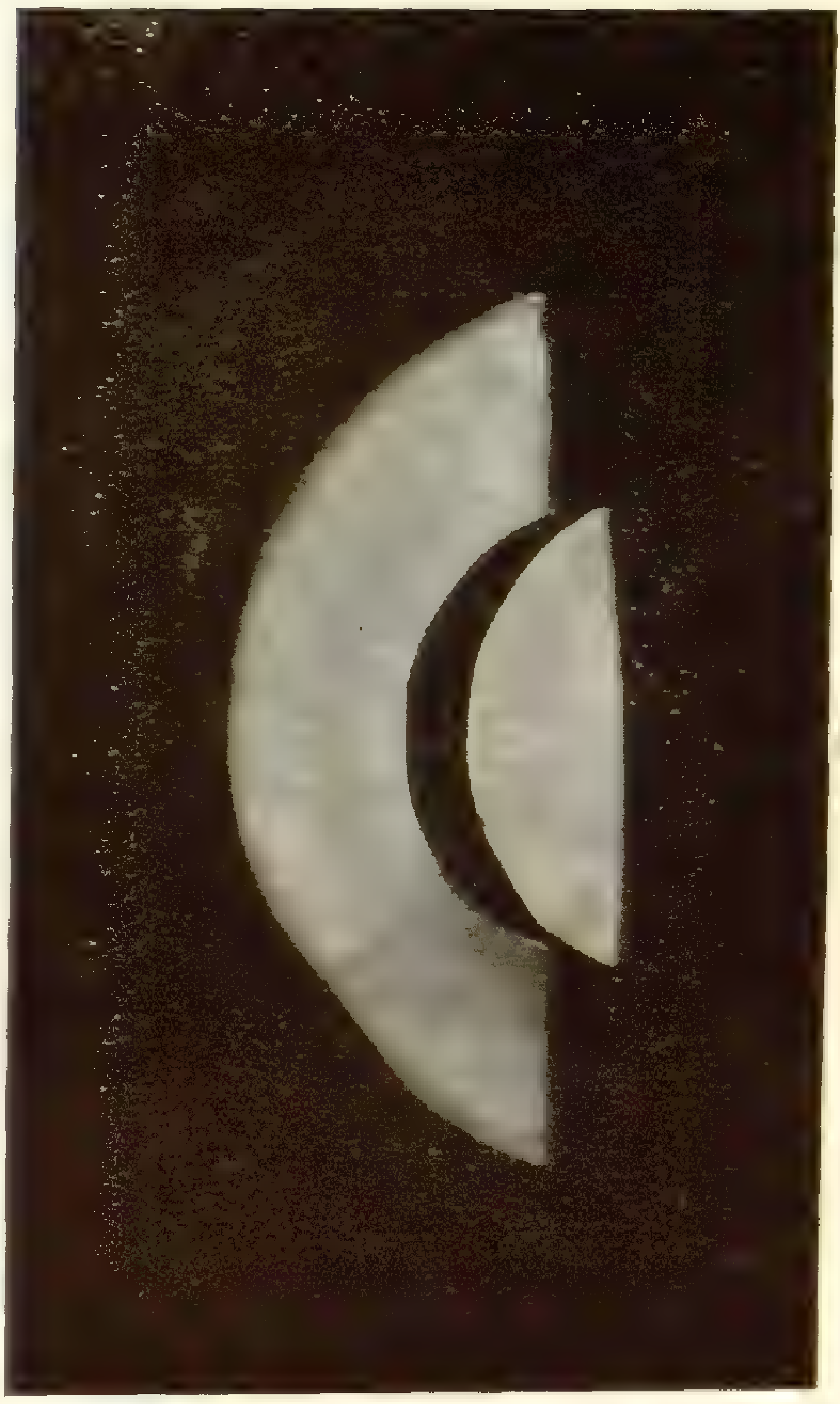


Fig 3.

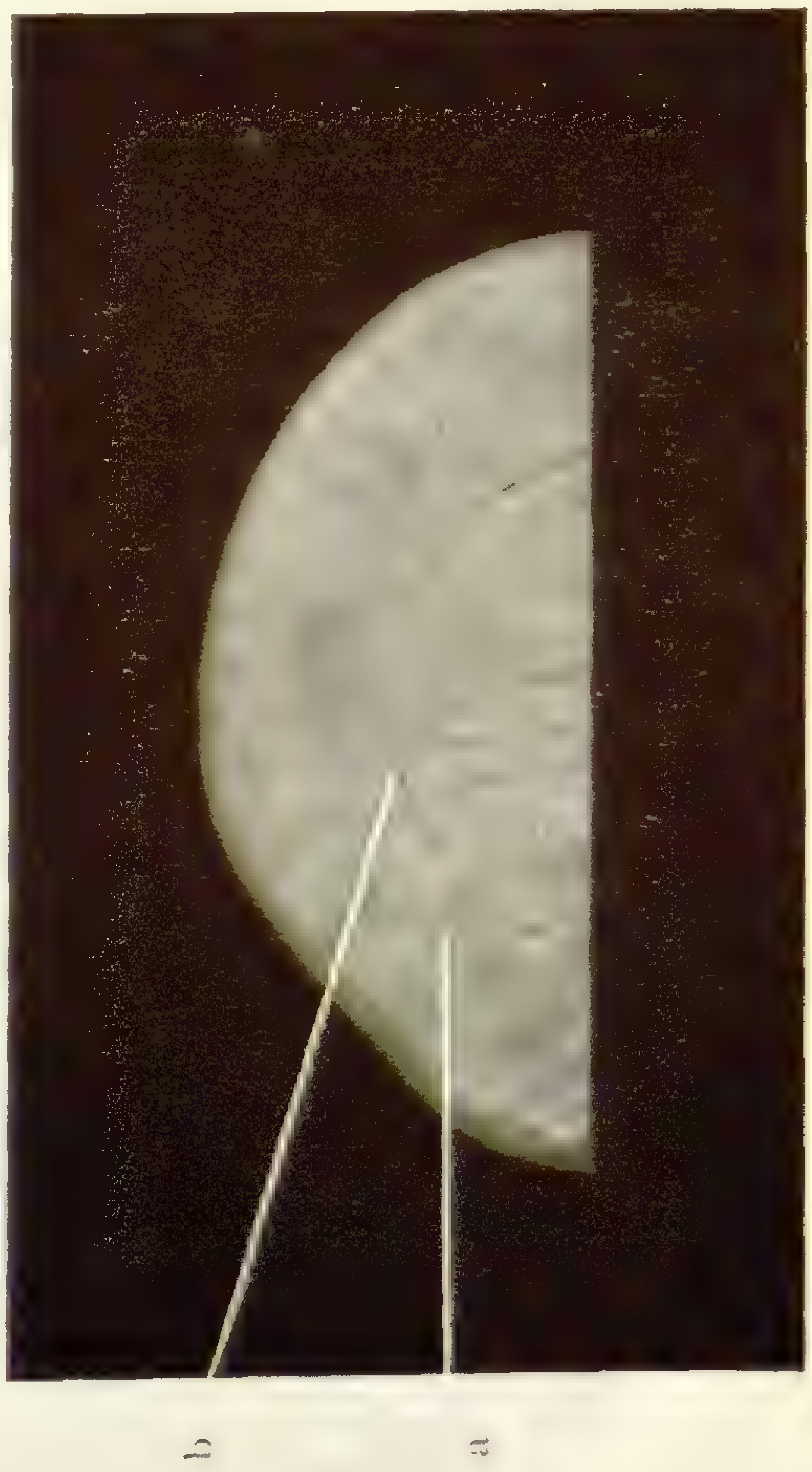
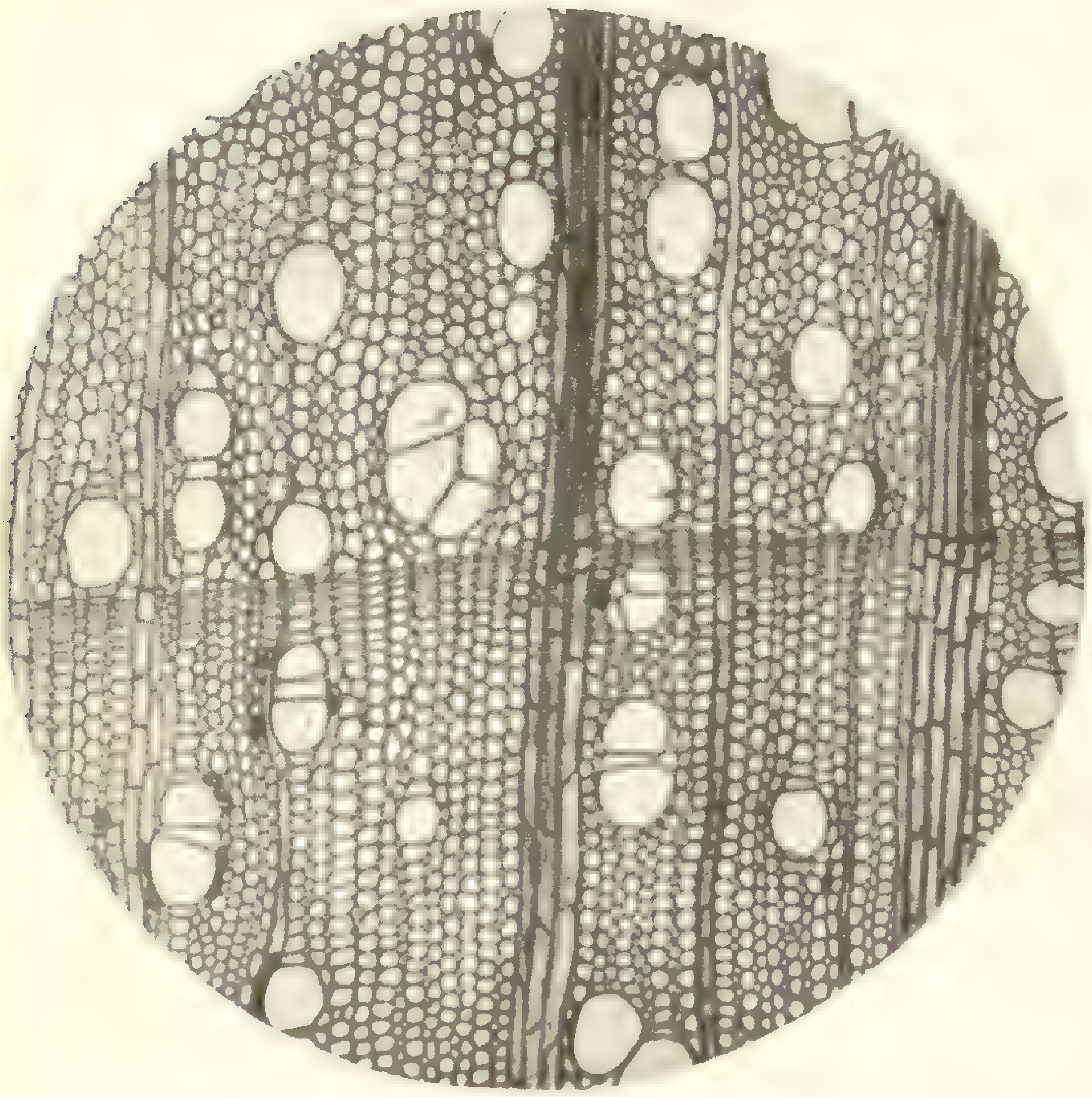


Fig. 2.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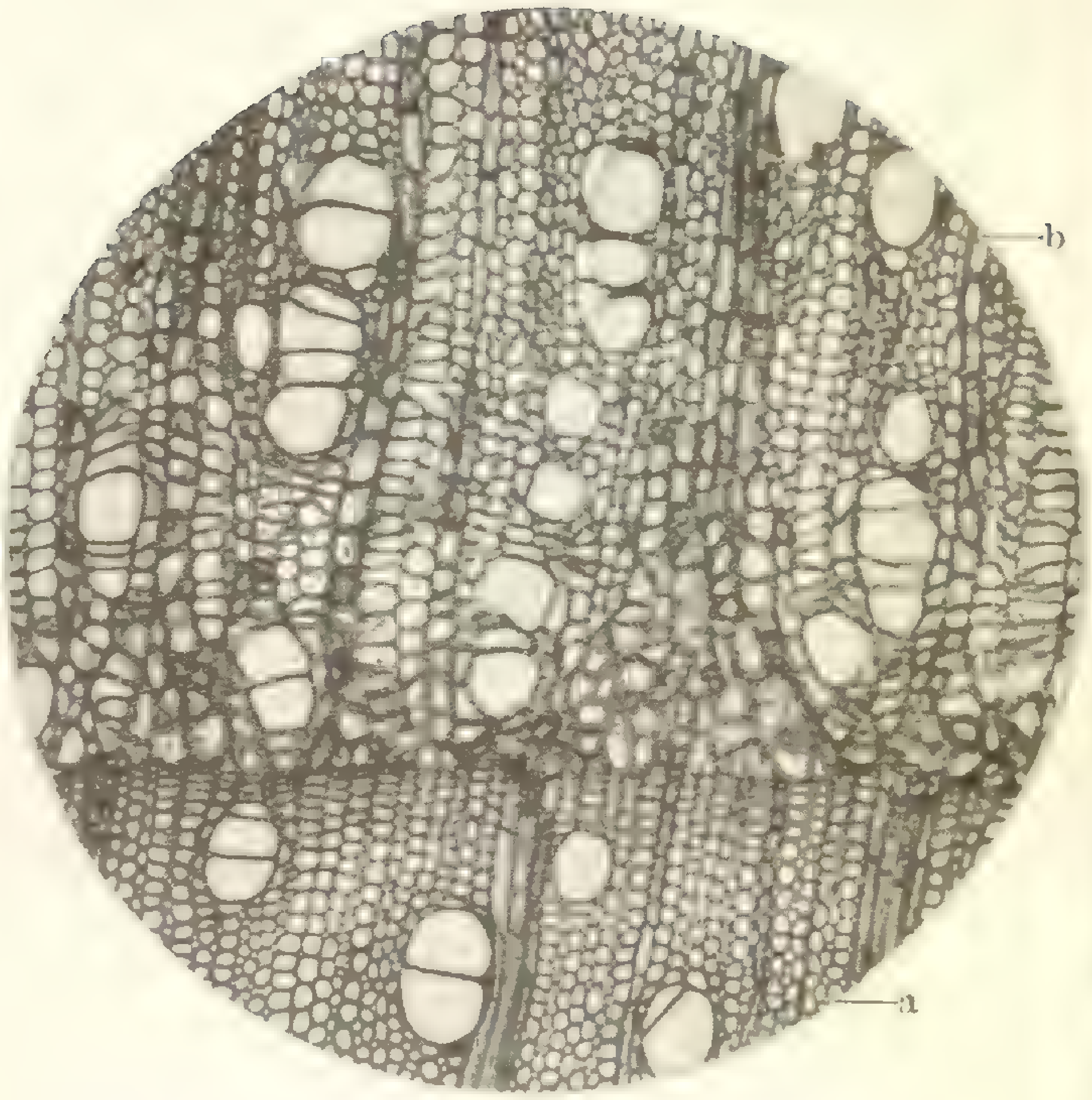


Fig. 2.

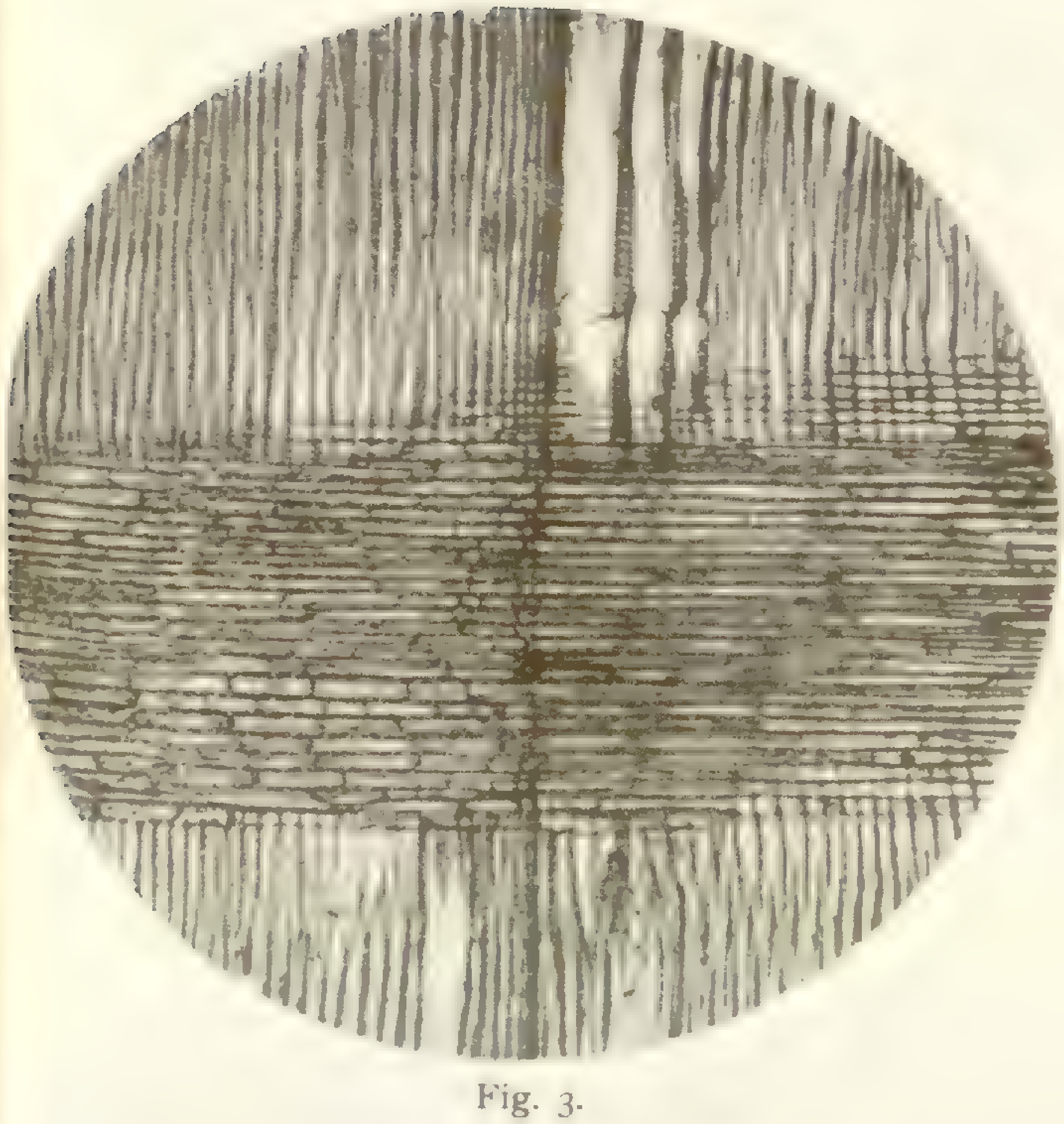


Fig. 3.

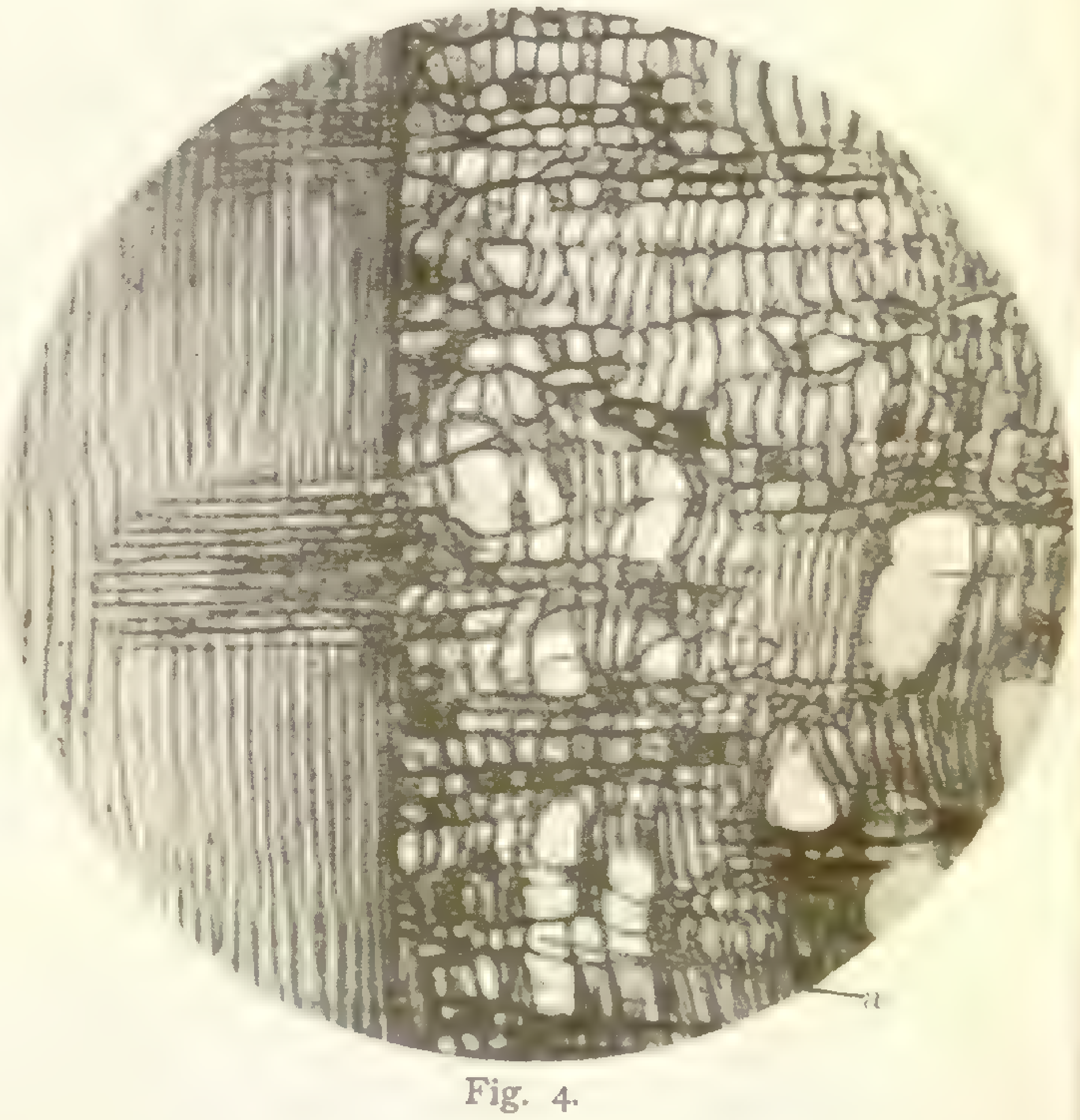
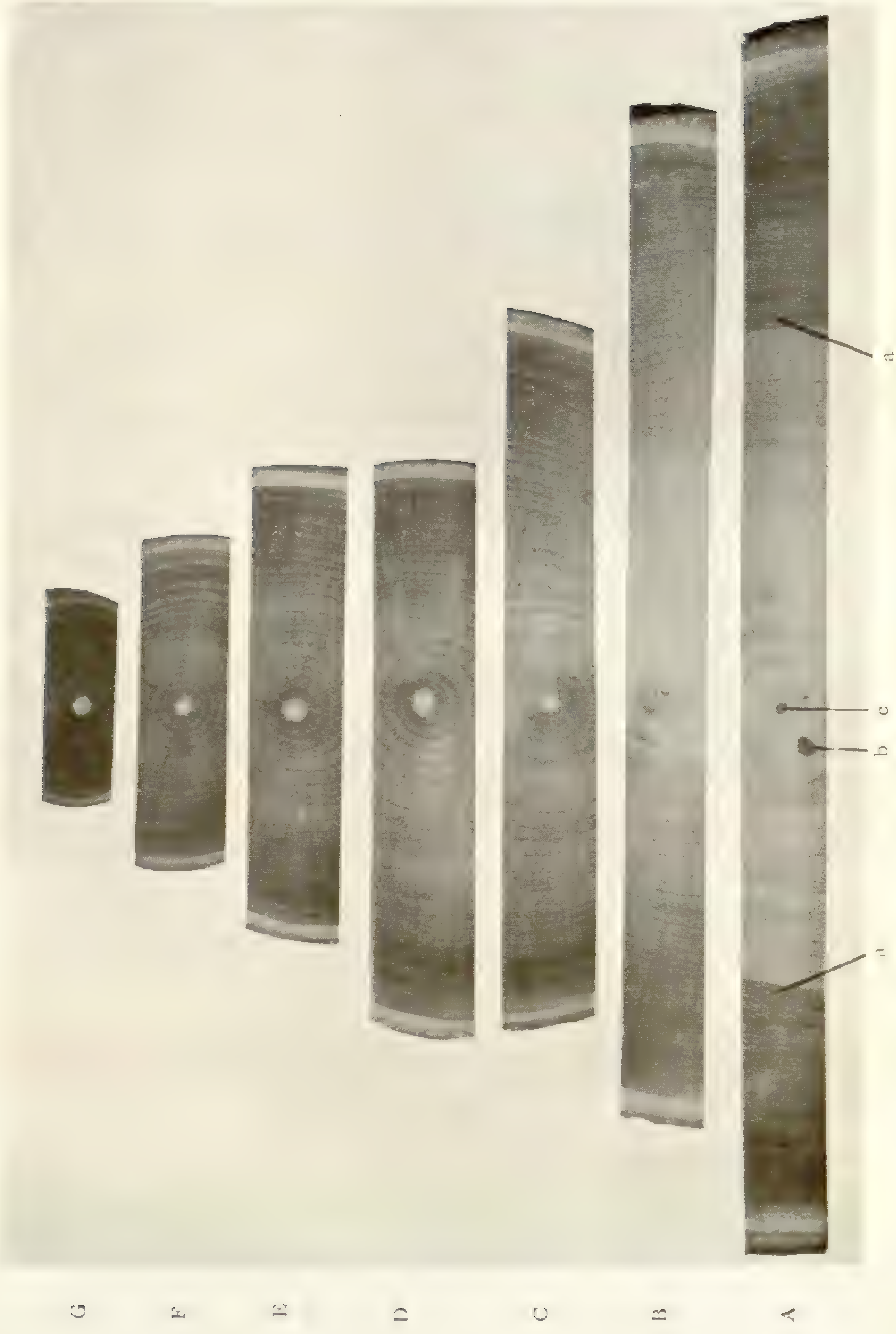


Fig. 4.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NOTES

FROM THE

ROYAL BOTANIC GARDEN, EDINBURGH.

APRIL 1923.

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Chinese Species of Tsuga.

BY

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Assistant in Botany Department, Aberdeen University.

With Plate CXCIV.

THE following paper is an attempt to arrange and classify the Chinese specimens of *Tsuga* in the herbarium of the Royal Botanic Garden, Edinburgh. The material was collected in the south-west provinces of China, chiefly Yunnan, Szechuan and Western Hupeh.

Up to the present, species and varieties known are the following :—

Tsuga chinensis, Pritz. *Abies chinensis,* Franchet.

Tsuga yunnanensis, Masters. *Abies yunnanensis,* Franchet.

Tsuga Brunoniana, Carr., var. *chinensis,* Masters.

Abies dumosa, Loud., var. *chinensis,* Franchet.

Tsuga Mairei, Lemée et Léveillé.

In an enumeration* of Chinese Tsugas, Masters refers certain collections to *T. Sieboldii.* I have seen no specimen from China which can be referred to this species. In a later work† Masters enumerates under *T. yunnanensis* collections which in his previous paper he had included under *T. Sieboldii.* Henry 7156 —one of the specimens so treated by Masters—I have, after comparison with the type in Paris, referred to *T. chinensis.* Probably some of the other specimens which, so far, I have had no opportunity of examining, may have been wrongly included under *T. yunnanensis* by Masters.

Diagnostic characters. The condition of the leaf margin, generally employed in dividing the genus, was not a constant factor here and a division based on the character of the leaf apex was adopted. The utility of this feature as a diagnostic character was strengthened on finding that all plants with an entire leaf apex bore strictly sessile cones, while those with the leaf apex emarginate had shortly stalked cones. In all cases where the attachment of cones could be observed the combination of characters held. Of the described species* *T. yunnanensis* comes under the first group (i.e., leaf apex entire) and *T. chinensis* under the second. As the cone stalk of the plants of the Chinensis group is in all cases very short, the criterion used was the condition of the bud scales at the base of the cone. In stalked forms the scales retain the erect condition of an opening bud above which the stalk may or may not appear, while in the sessile forms the bud scales are flattened out against the base of the cone.

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* Journ. Linn. Soc. vol. xxvi, p. 556 (1902).
† Journ. Linn. Soc. vol. xxxvii, p. 421 (1906).

Yunnanensis Group. (i.e. leaf apex entire, cones sessile). Of the four collections thus placed in the Yunnanensis group, three, Ward 1666, Wilson 2098, and 2099, I believe to be the same as *T. yunnanensis*. The remaining one, Forrest 6747, differs so markedly in the type of cone that I believe it to be a distinct species. The cone scales of *T. yunnanensis* are finely striate, thin and fibrous, whereas those of Forrest 6747 are smooth, thick and woody in texture.

Chinensis Group. (i.e. leaf apex emarginate, cones stipitate). In this group one specimen, Wilson 2096, stood out very distinctly in the character of the mature cone. The cone scales thick, woody, polished and with truncate apices, open wide at maturity, spreading at an angle little less than 90° to the axis. All other cones in this group and in the previous one, have the scales erecto-patent at maturity.

Although the serration on the leaf margins was variable, one or two specimens in this group were found with persistently entire margins. To this sub-division belong Henry 7156, Wilson 2100 and 2097, all of which I believe to be the same as *T. chinensis,* and also Forrest 17,169. The latter has a long narrow needle often 25 mm. in length, in contrast to the short broad needle, rarely exceeding 18 mm. of *T. chinensis*. This together with differences in the cone scale and the colour and indumentum of the twig led me to believe that it was a distinct species.

Leaves of Ward 257 and Maire 203 were generally serrulate on the margin, but there was a marked difference in cone outline and in the size and shape of the cone scale. In Ward 257 the cone is obovate, the cone scales few in number (about 25) measure 14 × 13 mm. while in Maire 203 the oblong-ovate cone is composed of a larger number of smaller scales (about 35) 10 × 7 mm. and therefore I believe them to be distinct species.

The young twigs of all the Chinese Tsugas I have examined are more or less pubescent, the indumentum occasionally confined to the grooves between the pulvini, more often scattered in the grooves and on the lower part of the pulvini. The leaves, flat and grooved on the upper surface are either white underneath or concolorous. The one year twigs vary from a distinct yellow to a red-brown colour, the apex of the pulvinus invariably being redder or darker than the rest of the twig.

---

* Excluding *T. Mairei* which, ex descr., is probably incorrectly referred to Tsuga.

The anatomy of the leaf did not help very much in the systematic placing of the species. What differences I have found merely substantiate the formation of the two main groups. A difference in outline is maintained in a general way throughout the groups. In the Yunnanensis group there is a deep groove on the upper surface and a slight midrib on the lower surface, while the angles of the leaf are sharp. In the Chinensis group the groove on the upper surface is very slight and there is no midrib on the lower surface while the angles of the leaf are rounded. Exceptions, however, occur. The deep groove on the upper surface is absent in some leaf sections of Ward 1666, belonging to the Yunnanensis group (all sections were taken near the middle of the leaf) and sharp angles were observed in serrated species of the Chinensis group, so that variability in outline must be expected. The distribution of the hypodermal cells on the other hand has proved quite a constant factor. In both groups the arrangement on the lower surface is the same, a few cells beneath the resin canal and a few in scattered groups or continuous between the angle of the leaf and the beginning of the stomatic area. The difference is found on the upper surface. In the Yunnanensis group hypodermal cells are practically absent, a few cells subtend the deep groove only. In the Chinensis group all species show a large development of hypodermal cells in groups all along the upper surface or forming a continuous layer beneath the epidermis.

Key to the Species.

A. Leaf apex entire; cones strictly sessile; leaf margin serrulate; branchlets pubescent; hypodermis on upper surface restricted to groove.
  I. Cone scale woody in texture, smooth. 1. *Tsuga dura.*
  II. Cone scale fibrous in texture, finely longitudinally striate. . . . . 2. *T. yunnanensis.*

B. Leaf apex emarginate; cones shortly stalked; leaf margin serrulate or entire; branchlets pubescent; hypodermis scattered all along upper surface.
  I. Cone scales patent at maturity. . 3. *T. patens.*
  II. Cone scales erecto-patent at maturity.
    a. Leaves generally serrulate on margin.
      i. Scales up to 14 × 13 mm. about 25 per cone. . . . . . . 4. *T. Wardii.*

ii. Scales up to 10 × 7 mm. about 35 per cone. . . . . 5. *T. calcarea.*

b. Leaves always entire on margin.

i. Leaves up to 18 mm. long, branchlets yellow. . . . . . . 6. *T. chinensis.*

ii. Leaves up to 25 mm. long, branchlets brown or red-brown. . . . 7. *T. Forrestii.*

Enumeration of Species.

1. **Tsuga dura,** Downie, sp. n. Arbor 30–90-pedalis (ex Forrest); ramuli hornotini lutei, indumento sparso pallide brunneo, pulvino subprominente apice fusco-rubro-brunneo subconspicue rimoso alabastro axillari dimidio breviore, annotini teretes, mox cinereo-brunnei et sublaeves; alabastri squamae setulosae. Folia 6–21 mm. longa, 2 mm. lata, apice obtusa vel rotundata, basi in petiolum angustata, supra sulcata, subtus alba, fasciebus stomatiferis duabus e lineis 7–9 constitutis, margine parte dimidia superiore subregulariter denticulata, breviter petiolata. Amenta ♂ stipite 4 mm. longo suffulta, e ramulis iuvenilibus orta, aggregata. Strobili iuventute azureo-purpurei, maturi pallide brunnei, erecto-patentes, obtusi, 20 mm. longi, sessiles, squamis oblongis apice rotundatis vel fere subtruncatis anguste marginatis minute irregulariter denticulatis rigidis nitidis striis irregularibus inconspicuis vel fere deficientibus.

Yunnan. Eastern flank of the Lichiang Range. Lat. 27° 25′ N. Tree 30–90 ft. In isolated groups and specimens in mixed forests. Forrest, 6747. Aug. 1910.

2. **Tsuga yunnanensis,** Masters in Journ. Linn. Soc. vol. xxvi, p. 556 (1902), et vol. xxxvii, p. 421 (1906) pro parte.

Abies yunnanensis, Franchet in Journ. de Bot. xiii, p. 258 (1899).

Upper Burma, Hpimaw. Ward 1666.

Yunnan, Yang in Chan, in woods 2800 m. Delavay! (type).

Lichiang. Delavay 172!

Western Szechuan. Wilson 2098, 2099.

Specimen 172 collected by Delavay in Mountains of Lichiang is noted by Franchet as a form of *A. yunnanensis* with a slightly smaller cone. The material I have examined shows all gradations in the size of cone from that of Delavay 172 to the type specimen, and I conclude that they are all forms of one species.

3. **Tsuga patens,** Downie, sp. n. Ramuli novelli luteo-brunnei, indumento brevi pallido saepissime in sulcis tantum, pulvino rubro-brunneo alabastro axillari dimidio breviore, mox cinerei, vix laeves, pulvino conspicuo apice rimoso inferne am-

pliato. Folia 7–21 mm. longa, 2.5 mm. lata, apice rotundata vel truncata, emarginata, ima basi angustata, breviora integra, longiora parte triente superiore serrulata, supra sulcata, subtus saepissime subalbida, fasciebus stomatiferis duabus e lineis 7–9 constitutis. Strobili iuventute luteo-brunnei, maturi lutei vel castaneo-lutei, ambitu oblongo-ovati vel oblongi, 25–30 mm. longi, breviter sed distincte stipitati; squamae maturae patentes, bractea obovata apice conspicue bilobata 5 mm. longa irregulariter serrulata dorso puberula, squama seminifera subquadrata margine truncata vel truncato-rotundata 12 mm. longa 10 mm. lata auguste marginata fere integra parte exserta breviuscula et latiuscula nitida irregulariter distantius longitudinaliter striata, parte obtecta dense puberula; semina ambitu triangularia, 3.5 mm. longa, 2.5 mm. lata, ala 9 mm. longa 4 mm. lata.

Western Hupeh. Wilson, 2096. Type. (Arnold Arb. Exped.) July 1907, and Nov. 1907.

4. **Tsuga Wardii,** Downie, sp. n. Arbor 80–100-pedalis trunco saepe 10–40-ped. supra basem aequaliter bifurcato (ex Ward); ramuli novelli pallide brunnei, indumento brevi subdenso, pulvino rubro-brunneo subconspicue rimoso alabastro axillari dimidio breviore, haud conspicue sulcati, mox supra cinereo-brunnei, infra fusco-brunnei, pulvino per annos 3–4 persistente. Folia omnia immatura, 10–20 mm. longa, 1.5 mm. lata, apice rotundata vel subtruncata, emarginata, basi in petiolum brevem angustata, margine praesertim apicem versus serrata, supra sulcata, subtus alba, fasciebus stomatiferis duabus e lineis 5–7 constitutis. Inflorescentia ♂ distincte stipitata. Strobili iuventute rubro-purpurei, maturi erecto-patentes, ambitu oblongo-obovati, 21 mm. longi, stipite brevi squamis persistentibus obtecto suffulti, bracteis apice bifidis; squamae seminiferae obovatae vel rotundato-obovatae, apice truncatae vel subtruncato-rotundatae, 14 mm. longae, 13 mm. latae, anguste et haud conspicue marginatae, fere integrae, parte exserta maiuscula luteo-brunnea nitida longitudinaliter irregulariter corrugata, parte obtecta dense puberula sulcata.

N.W. Yunnan and E. Tibet. Chung valley, 9–10,000 ft. also in mixed forests of Doker-la, Mẹkong-Salween Divide. Lat. 28°. Ward, 257, May 1913.

5. **Tsuga calcarea,** Downie, sp. n. Ramuli iuventute pallide rubro-brunnei, indumento brevi pallido subdenso, pulvino apice rubro-brunneo, annotini haud conspicue sulcati, mox fusco-grisei vel griseo-brunnei. Folia 6–20 mm. longa, 2 mm. lata, apice truncata vel subtruncata, emarginata, apud basem angustata, breviora integra, longiora saepissime serrulata, pagina

utraque concoloria vel inferiore subalbida superiore sulcata, fasciebus stomatiferis duabus e lineis 7–9 constitutis, breviter petiolata. Strobili maturi erecto-patentes, pallide brunnei, ambitu oblongo-ovati, 21 mm. longi; squamae seminiferae oblongae, apice rotundatae vel subtruncatae, angustissime marginatae, haud recurvae, fere integrae, parte exserta brevi lata pallide brunnea nitida irregulariter longitudinaliter sulcata.

Yunnan. Mi-monts arides, calcaires à Tché-hay, altitude 2600 m. Grand et superbe résineux à aubier rose, fruits très petits, dressés-rameaux tendant à la verticale (rare). Maire, 203. Octobre.

6. **Tsuga chinensis**, Pritz. in Engler's Bot. Jahrb. vol. xxix, p. 217 (1900); Masters in Journ. Linn. Soc. vol. xxvi, p. 556 (1902) et vol. xxxvii, p. 421 (1906).

T. Sieboldii, Masters, l.c. vol. xxvi, p. 556, saltem pro parte, non Carr.

T. yunnanensis, Masters, l.c. vol. xxxvii, p. 421, saltem pro parte, non Carr.

Abies chinensis, Franchet in Journ. de Bot. xiii, p. 259 (1899).

Szechuan, near Tchen keou tin, altitude 2500 m. Farges 808! (type).

Szechuan. Henry 7156.

Western Szechuan. Wilson 2097, 2100.

7. **Tsuga Forrestii**, Downie, sp. n. Arbor 30–80-pedalis (ex Forrest); ramuli primo brunnei vel rubro-brunnei, indumento brevi pallido, pulvino rubro-brunneo nitido inferne gradatim pallescente ramulis annotinis subprominente infra apicem marginatum ampliato, mox supra griseo-brunnei, infra rubro-brunnei, cortice transverse fisso pulvino subconspicuo. Folia 10–25 mm. longa, 2 mm. lata, apice rotundata, emarginata, ima basi in petiolum angustata, integra, concoloria, supra sulcata, subtus fasciebus stomatiferis duabus e lineis 6–8 compositis instructa, breviter petiolata. Strobili lutei vel pallide luteo-brunnei, ambitu ovati vel oblongo-ovati, 25–30 mm. longi, breviter stipitati; bracteae ovatae, apice breviter bilobatae, 4 mm. longae, irregulariter denticulatae, breviter petiolatae, dorso puberulae, inferne margine ciliatae; squamae seminiferae truncato-rotundatae, dorso convexae, basi auriculatae, 12 mm. longae, 13 mm. latae, longitudinaliter subregulariter striatae, marginatae, integrae, parte exserta nitida glabra luteo-brunnea, parte inclusa dense puberula. Semina 3 mm. longa, ala 10 mm. longa.

Yunnan, Lichiang range. Lat. 27° 30′ N. Tree of 30–80 ft. in pure and mixed forests 10–13,000 ft. Forrest, 17,169. Nov. 1918.

NOTE.—Very similar to this species is Maire 692, 1914.

Grand et superbe résineux (rare). Fl. jeunes. Coteaux arides à Siao-ou-long. Alti. 2550 m., Juin.

Species Exclusae vel Dubiae.

Tsuga Brunoniana, Masters in Journ. Linn. Soc. vol. xxxvii, p. 421 (1906), an Carr.?

Tsuga Brunoniana, Carr., var. *chinensis,* Masters in Journ. Linn. Soc. vol. xxvi, p. 556 (1902). *Abies dumosa,* Loud., var. *chinensis,* Franchet in Journ. de Bot. xiii, p. 258 (1899).

Tsuga Sieboldii, Masters in Journ. Linn. Soc. vol. xxxvii, p. 421 (1906), an Carr.?

Tsuga Mairei, Lemée et Léveillé in Le Monde des Plantes, vol. xvi, p. 20 (1914). Ex descr. this species is probably incorrectly referred to *Tsuga.* There is no specimen in the Léveillé herbarium in Edinburgh.

In conclusion I wish to thank Professor W. G. Craib at whose suggestion the study was undertaken and to whom I am indebted for helpful criticism throughout the work and in the preparation of the manuscript. Acknowledgment is also made to the officials of the herbarium of the Paris Museum for permission to examine type specimens and to Professor W. Wright Smith for the preparation of the plate. I should also like to express my indebtedness to the late Professor Sir I. Bayley Balfour for the use of the Edinburgh herbarium material.

EXPLANATION OF PLATE CXCIV.

Illustrating Miss Downie's Paper on Chinese Species of Tsuga.

1. Cone of *Tsuga yunnanensis,* Masters—Wilson, 2098.
2. Cone of *Tsuga dura,* Downie—Forrest, 6747.
3. Cone of *Tsuga calcarea,* Downie—Maire, 203.
4. Cone of *Tsuga Wardii,* Downie—Ward, 257.
5. Cone of *Tsuga chinensis,* Pritz.—Wilson, 2097.
6. Cone of *Tsuga patens,* Downie—Wilson, 2096.
7. Cone of *Tsuga Forrestii,* Downie—Forrest, 17,169.

A New Chinese Osmanthus.

BY

ALFRED REHDER,
Arnold Arboretum, Harvard.

Osmanthus Forrestii, sp. nov.

Frutex 3–6-metralis ramulis junioribus pallide griseo-flavidis glabris; gemmae perulis late ovatis acuminulatis glabris margine ciliato excepto. Folia persistentia chartacea, ovato-lanceolata, vel oblongo-lanceolata, basi late cuneata vel rotundata, acuminata, integra vel spinoso-dentata, dentibus utrinque 18–20 erecto-patentibus satis angustis basi 1–2 mm. latis, glabra, supra nigro-punctulata, utrinque nervis 13–18 supra ut costa leviter, subtus magis elevatis, reticulo nervulorum subtus praecipue in foliis dentatis conspicue elevato, supra minus vel interdum saltem in foliis integris vix elevato; petioli validi, 5–7 mm. longi, glabri. Flores cremeo-albidi, fragrantes, fasciculati, e gemmis axillaribus; pedicelli graciles, circiter 1 cm. longi; calyx brevissimus irregulariter vel interdum indistincte 4-lobatus lobis latioribus quam longis eroso-denticulatis vel integris; corolla circiter 5 mm. longa, fere ad basin 4-partita lobis ellipticis; stamina paullo supra basin inserta corolla paullo breviora; antheris ovato-ellipticis basi cordatis apice obtusis, filamentis brevissimis. Fructus non visus.

CHINA: Northwestern Yunnan; mountains west of Yung-peh, Lat. 26° 30′ N., Long. 100° 50′ E., altitude 8–9000 ft., amongst scrub on open rocky hillsides and in open mixed forests. G. Forrest, No. 21,050 (spinous-leaved shrub of 9–20 ft.; flowers sweetly fragrant, creamy white).

This new species seems most closely related to *O. armatus*, Diels and *O. serrulatus*, Rehder; the former is easily distinguished by the minute pubescence of the winter-buds, young branchlets and petioles, by the comparatively narrower leaves not reticulate beneath and with fewer and broader spiny teeth, and by the less deeply divided corolla; *O. serrulatus* differs chiefly in its cuneate leaves usually broadest above the middle, not reticulate beneath and with smaller and more numerous teeth pointing forward, in the slenderer and longer petioles and pedicels, in the larger calyx and in the narrower anthers on longer filaments.

Polyembryony in Sarcococca ruscifolia, Stapf.

BY

MATTHEW YOUNG ORR,
Assistant in Laboratory, Royal Botanic Garden, Edinburgh.

With two figures in the text.

THE number of Angiosperms in which Polyembryony has appeared as an occasional or habitual feature of their reproductive processes is comparatively small, and present-day botanical literature is singularly barren of further additions to the list. A new case of polyembryony is therefore of interest, more particularly if it be found in a Family which has not previously furnished any example of the phenomonon. Such a case has recently come to light in the embryogeny of *Sarcococca,* and, so far as is known to the writer, this is the first mention of a departure from the normal mode of embryo-formation in a member of the Buxaceae.

While examining fruits of *Sarcococca ruscifolia,* which had been brought to the Botanic Garden Laboratory from an estate in East Lothian, it was discovered that fully one half of the ripe seeds contained more than one embryo, there being usually, in each seed, two fully-formed embryos with radicle, plumule and cotyledons, and a varying number of minute, immature embryos in various stages of development.

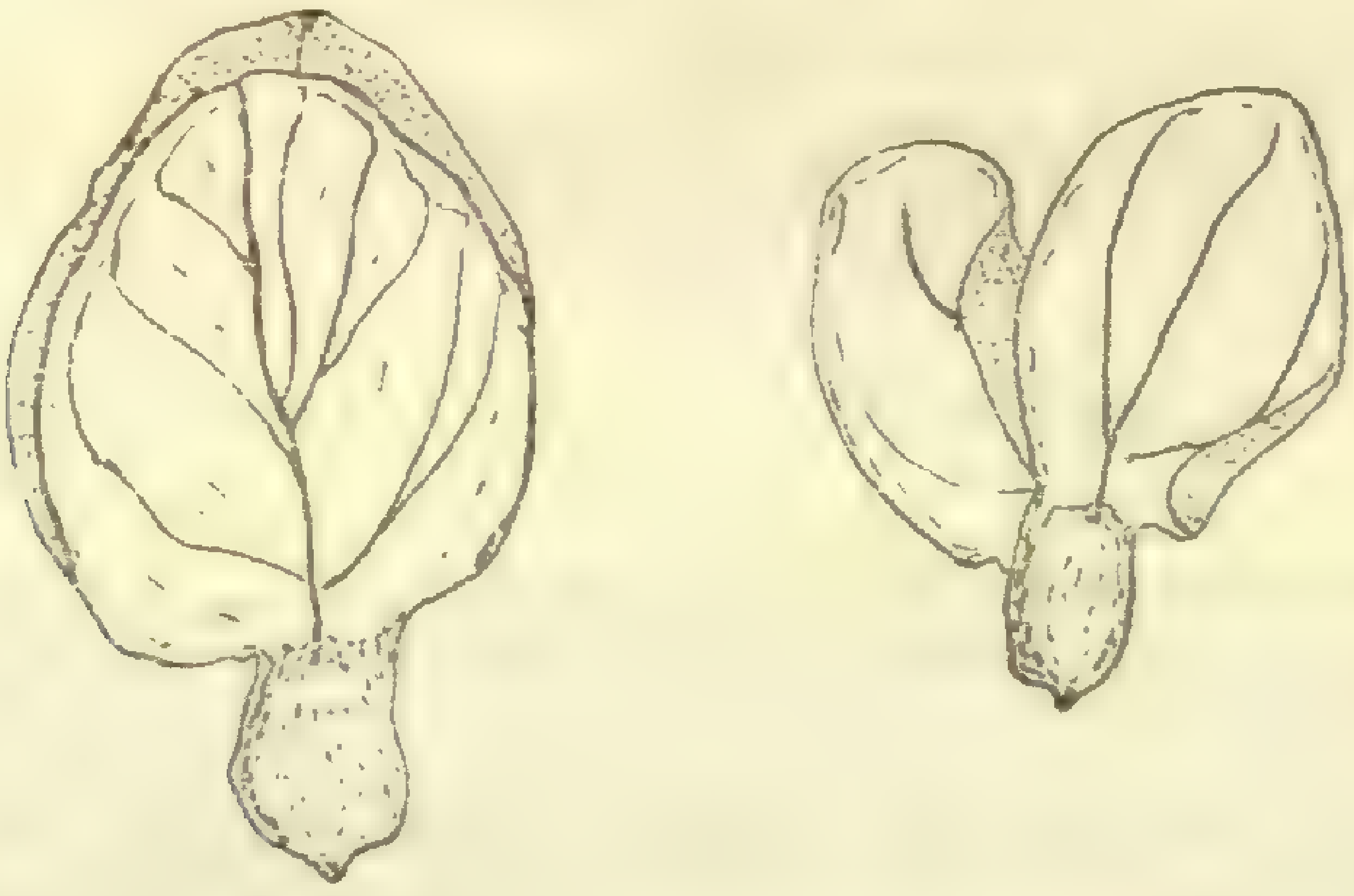

FIG. 1.—Two embryos from a seed of *Sarcococca ruscifolia.* × 10.

The only apparent distinction between the two mature embryos taken from any one of these seeds was a difference in size, and it is a matter for conjecture whether both of these embryos might not have developed, pari passu, into seedlings had the seed been allowed to germinate. Two such embryos are shown in fig. 1.

A further supply of seed was obtained from plants of the same species growing in the Royal Botanic Garden, and these were also found to be polyembryonate; in one case, as many as seven embryos, showing different degrees of development, being isolated by dissection from a single seed.

The problem of the origin of these several embryos was not one which could be solved satisfactorily by an investigation of the material then available; but, by removing the endocarp, and embedding the seed in paraffin, it was possible to obtain a series of sections in which the relative positions of the embryos, and their relationship to the tissues within the seed, could be demonstrated. The anatomical features disclosed by these preparations can best be illustrated by reference to fig. 2, which is a camera lucida drawing of a longitudinal section through the micropylar region of a ripe seed.

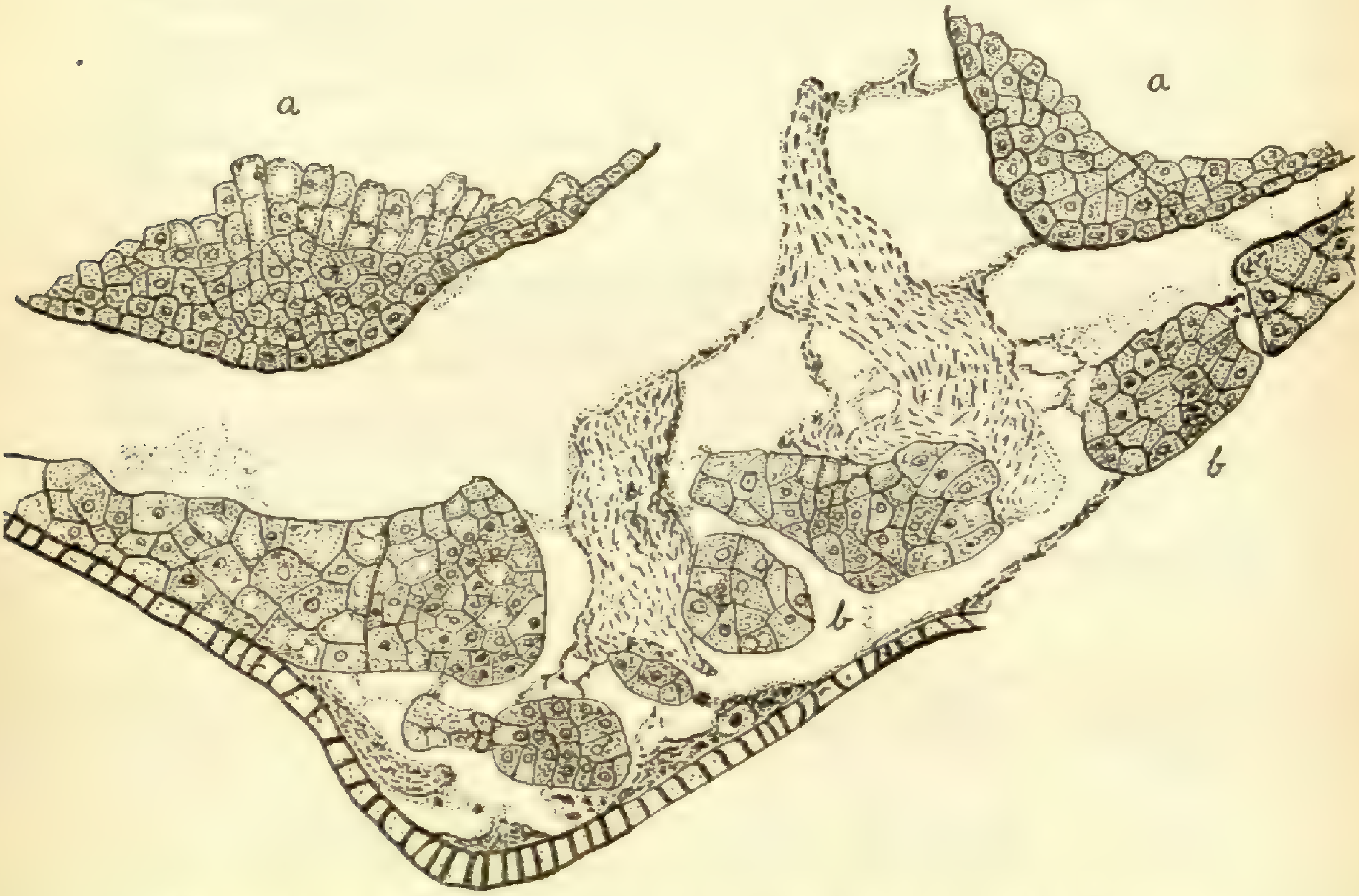

FIG. 2.—Longitudinal section through the micropylar region of a seed of *Sarcococca ruscifolia*. a,a, mature, and b,b, immature embryos. × about 100.

In the upper half of the figure, there appear, in section, the radicle apices of two embryos similar to those represented in fig. 1, while, in the lower, micropylar area, intermixed with the disorganised tissue, there can be seen a number of distinct cell-masses which are the immature embryos referred to above.

From the figure, it will be seen that the position of these immature embryos in the disintegrating tissue at the apical end of the seed is somewhat suggestive of their genesis in the nucellus of the ovule at an earlier period of growth. This derivation of embryos from sporophytic tissue outside the embryo-sac is by no means an uncommon feature of certain forms of polyembryony, and has been observed in both Monocotyledons and Dicotyledons by various investigators.

In the Euphorbiaceae, for example, it has been established by the researches of Strasburger* on *Coelebogyne ilicifolia* (*Alchornea*), and by the later work of Hegelmaier† on *Euphorbia dulcis*, that embryos produced by these two polyembryonic species have their origin in the nucellus. Bearing in mind the close relationship existing between the Euphorbiaceae and Buxaceae, it might be reasonably inferred that the undifferentiated embryos in the seed of *Sarcococca* have arisen from the same ovular tissue.

Whether the fully-developed embryos shown in fig. 1 originated in like manner, or in some other way, is a debatable point at this stage. Absolute proof regarding the morphological origin of both the mature and immature embryos in the seed of *Sarcococca ruscifolia* can only be attained by a study (which is now being prosecuted) of the whole process of embryo-building throughout the entire period of maturation. All else is pure speculation.

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* E. Strasburger in Zeitschr. Naturwiss. Jena, xii (1878), p. 659.

† F. Hegelmaier in Ber. Deut. Bot. Gesell., xxi (1903), p. 6.

On the Resin Ducts in the Leaf of Picea brachytyla, Pritzel.

BY

MATTHEW YOUNG ORR,
Assistant in Laboratory, Royal Botanic Garden, Edinburgh.

With one figure in the text.

Picea brachytyla, Pritzel*, one of the flat-leaved Spruces of Western China, has now been in cultivation for a number of years; but, as all who have studied Conifers will admit, it is by no means an easy matter to identify specimens of this *Picea,* with any degree of certainty, by its vegetative characters alone. The difficulty of separating this species from *Picea complanata* is a case in point, and it is recorded that Franchet himself referred a specimen of the latter to his *"Abies brachytyla."*

This difficulty of accurately placing a non-fruiting specimen is not confined to *Picea brachytyla* alone, but, if the unusual anatomical feature which has come under the observation of the writer, and which forms the subject of this note, should prove to be constant in the species, this problem of identification, in the case of *Picea brachytyla* at least, ought to be the more easily solved.

In the leaves of *Piceas,* belonging to the Omorica section, there are, as is well known, two laterally placed, marginal resin ducts, which extend from the base of the leaf throughout its whole length, terminating abruptly immediately behind the apex. These resin passages are in contact with, or may be partially enclosed by, the hypoderm of the under side of the leaf.

The more minute details of their morphology need not be discussed here, since the chief purpose of this paper is to call attention to the diagnostic feature referred to above, which has apparently been overlooked in the past, since no reference to it can be found in the literature appertaining to this species.

Some little time ago, while examining microscopic preparations of the leaves of *Picea brachytyla,* grown in the Royal Botanic Garden from seed collected in Western Hupeh by the Veitch Expedition in 1900, it was noticed that in transverse sections, cut from near the base of the leaf, there were *four* resin ducts visible,

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* See Plantae Wilsonianae, vol. ii (1914), p. 33.

[Notes, R.B.G., Edin., No. LXVII, April 1923.]

in place of the usual two, and that these were in pairs, occupying the normal position below the lower epidermis (Fig. 1a). The outer duct of each pair was slightly smaller than the inner one, and both were surrounded by moderately thick-walled cells, continuous with the hypoderm. These "twin" resin ducts gave to the leaf section a very striking appearance, forming a marked contrast to the normal arrangement found in all other flat-leaved Spruces.

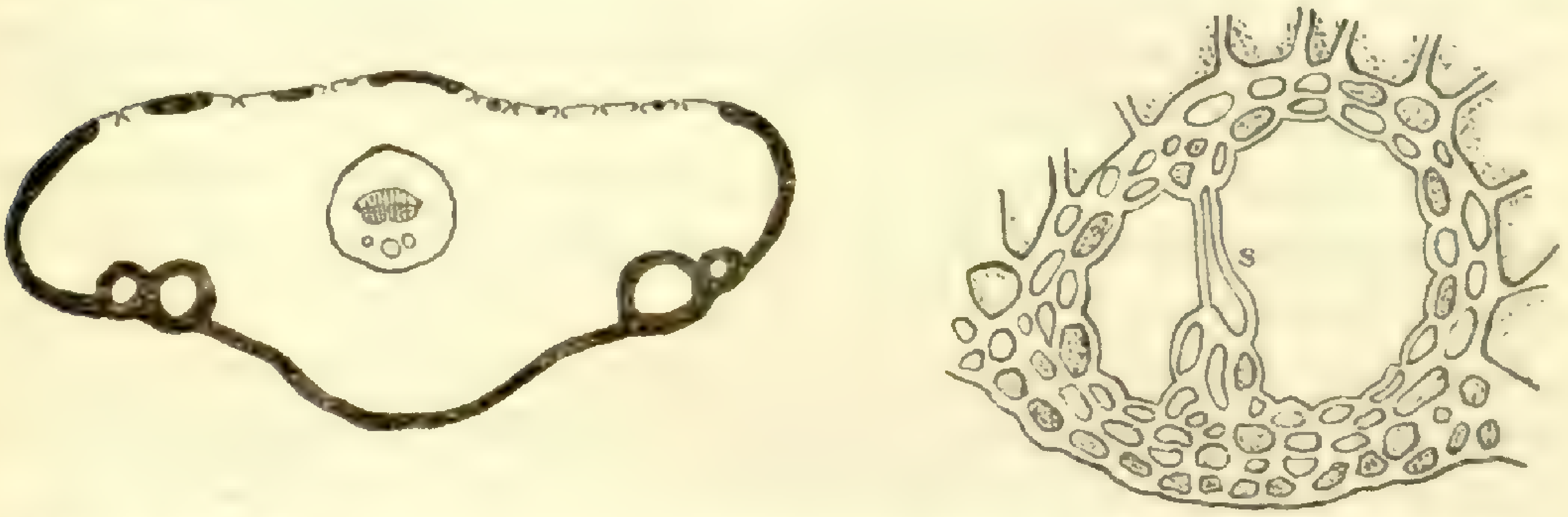

FIG. 1.—(**a**) Diagram of a transverse section of a leaf of *Picea brachytyla*, showing the paired resin ducts. × about 30.

(b) Transverse section of a resin passage, showing the origin of the secondary duct. s, the septum. × about 100.

In order to test the constancy of this feature, and thereby form an estimate of its possible value as a specific indicator, similar preparations were made from the leaves of a herbarium specimen of a native plant of *brachytyla,* collected by Wilson in Western Hupeh, and bearing the number 1896. Here, as in the cultivated plant, a similar duplication of the resin ducts was observed. An examination of the leaves of a fruiting specimen grown in Ireland furnished additional evidence of the universality of the phenomenon, while indicating further that it is not confined entirely to the leaves of non-fruiting branches.

Unfortunately, it was not possible to extend the investigation to include the type and co-types of the species, as these were not available; but in the leaves of all plants that were examined, the doubling of the resin passages had taken place, forming an unmistakable feature of the transverse section.

The morphological origin of these secondary resin ducts is interesting and has been worked out in detail by means of serial sections. In those sections cut across the leaf immediately above its constricted base, only two resin passages were visible; but at a point about 1 or 2 mm. distant from the base, the outer, secondary ducts take their origin from the primary ducts by a process of division. The first indication of this division is the production of a partial septum, formed by the elements of the epithelial layer, which have extended inwards at two points. By the subsequent growth in length of the cells composing the two portions of this incomplete septum, the projecting parts become united, and the division of the resin passage longitudinally is accomplished. This stage is represented in Fig. 1b.

The paired resin ducts, separated only by the septum, remain in close contact with each other, running parallel through the leaf for about one third of its length; but beyond this point, the secondary ducts diverge in a lateral direction, away from the parent ducts, and in successive sections cut through this region of the leaf, it is possible to trace their course outwards to the margin, where they ultimately die out, about midway between the base and apex of the leaf.

The two main resin passages are continued almost to the apex, and transverse sections of the upper half of the leaf present the normal arrangement seen in the leaves of other flat-leaved *Piceas,* except that in one case a small lateral duct was observed near the apex, midway between the main duct and the leaf margin, but it only extended for a very short distance.

Why the leaves of *Picea brachytyla* should possess this peculiar feature of paired resin ducts it is not easy to say; but it is a structural phenomenon which has every appearance of being constant in the species, and, so far as is known, it is not found in any other species of *Picea.*

While it is recognised that in many plants anatomical differences have a questionable taxonomic value, yet in the genus *Abies,* the position of the resin canals in the leaf is often made a deciding factor in the identification of a species, and it is suggested, on this analogy, that the unusual arrangement of the resin ducts in the leaf of *Picea brachytyla* might also be used with advantage as an aid to diagnosis in doubtful cases.

Note on the Varieties of Geum elatum, Wallich.

BY

W. EDGAR EVANS, B.Sc.,
Assistant in Herbarium, Royal Botanic Garden, Edinburgh.

With Plates Nos. CXCV and CXCVI.

WHILE working out certain Chinese specimens, which had been regarded as forms of the well-known Himalayan *Geum elatum*, Wall., I had occasion to examine somewhat critically a considerable number of authentic examples of that species. In the hope of helping to elucidate its varieties, the results obtained are here set down.

The sub-genus *Sieversia* of the genus *Geum*, distinguished by the permanent attachment of the whole style to the achene, is represented in the Himalaya by two alpine species only, which may be recognised as follows :—

Radical leaves having well-developed lateral leaflets; the terminal leaflet or lobe not greatly exceeding the upper lateral ones, not cordate. . . . . *G. elatum*, Wall.
Radical leaves having only very much reduced lateral leaflets; the terminal leaflet or lobe very greatly exceeding the lateral ones, deeply cordate . . . *G. sikkimense*, Prain.[*]

Of these, the latter seems to be both rare and local, having apparently been collected only on three occasions, always in Sikkim; the former, on the other hand, has a wide range throughout alpine Himalaya, extending from Kashmir to Sikkim at least; while Dr L. Diels in his "Flora von Central China"[†] states that the form of it known as var. *humile*, Royle is distributed through China from Kansu and Shansi to Yunnan, and Franchet records that it was collected by Delavay in the latter province.[‡]

The Chinese distribution, just referred to, seems to be based, largely at least, on misidentification and will in consequence require careful revision.[§] I have, it is true, seen only three Chinese gatherings of reputed *Geum elatum*, all from Yunnan

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[*] Journ. As. Soc. Beng., lxxiii (1914), p. 200, Pl. 7.
[†] Engler's Jahrbuch., xxix (1900), p. 404.
[‡] Plantae Delavayanae, p. 208.
[§] See Cardot in Notul. System. Paris, iii (1916), p. 225.

[Notes, R.B.G., Edin., No. LXVII, April 1923]

and only one of them vouched for by Dr Diels*, but since all these specimens have ascending ovules and basally deciduous styles and are thus referable to the genus *Coluria* not *Geum*, the area, if any, occupied in China by the species now under consideration must, for the present, be regarded as doubtful.

In the account of the varieties of *Geum elatum*, Wall. which follows, it will be seen that the type number Wall. Cat. 711 covers two of these. From the Catalogue itself it would appear that two distinct gatherings, one from Kumaon and one from Sirmore, were distributed under this number and it is therefore likely that all the specimens from one of these localities were what I here name var. *typicum*, those from the other being the full-statured form with almost glabrous achenes for which I propose the varietal name *leiocarpum*. Unfortunately, it is quite impossible to say from which locality any given specimen originated, but it is worthy of note that the whole of the type sheet from the Kew Herbarium (Plate No. CXCV), kindly lent me for examination, is the former, while the whole of that in the Edinburgh Herbarium is the latter. Owing to this uncertainty it has not been possible to include either in the distributional notes, though the specimens in question will form the types of the respective varieties should further investigation prove their validity.

With regard to the third variety (var. *humile*, Royle) I am of the opinion that it may prove merely a stunted state of var. *leiocarpum*. The plant from Gossain Than, distributed as Wall. Cat. no. 712, may be regarded as the best available example of *Geum elatum*, Wall. var. *humile*, Royle as understood by Sir J. D. Hooker.† The only description of this, which does more than refer to its reduced size and generally solitary flowers, is that of Lehmann.‡ From this we learn that the few Nepalese specimens in question were in fairly advanced condition, the petals being much withered or fallen and that, in the portion received by him, the inflorescence did not exceed the leaves and the achenes were glabrous. An examination of the single representative specimen in the Kew Herbarium (Plate No. CXCVI) shows that it agrees with Lehmann's account, except that the inflorescences are almost twice the length of the leaves and the achenes are tipped with a very few, short, bristly hairs. From this it seems clear that var. *humile*, Royle has achenes which show just the same characters and degree of variation as do those of var. *leiocarpum* and in addition that its stature is subject to at least some variation towards the taller-growing forms of the species. In this connection it should be borne in mind that almost equally reduced forms with the densely hispid achenes of var. *typicum* also occur, as an example of which I may cite a Sikkim specimen in the Edinburgh Herbarium (W. W. Smith No. 3451). For the reasons above detailed, then, I am inclined to regard var. *humile,* Royle as merely a reduced state of the tall-growing var. *leiocarpum;* I have, however, retained it pending fuller investigation.

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* Notes, Roy. Bot. Gard. Edinb. vii (1912), p. 108.

† Flora of British India, ii, p. 343.

‡ Pugill. ix, p. 9; Revis. Potentill., p. 47, t. 17.

I wish here to express my thanks to the Director of the Royal Botanic Gardens, Kew, for the loan of the type specimens figured and to Professor Wright Smith for help in various ways.

Enumeration of the Varieties of Geum elatum, Wall. with Synonymy, etc.

Varietates tres sequentes fortasse ita sunt distinguendae :—

1. Var. α **typicum** W. E. Evans (Plate No. CXCV); foliorum pinnis lateralibus haud approximatis, caulibus floriferis elongatis vulgo 2-6-floris, carpellis dense hispidis recognita.

Geum elatum, Wall. Cat. no. 711 p. p.; Hook. f. Flor. Brit. Ind., ii, p. 343 (excl. var. *humile*).

Sieversia elata, Royle Ill., p. 207 (excl. var. *humilis*), t. 39.

ALPINE HIMALAYA; generally distributed. Kashmir, J. F. Duthie s.n.!; Chamba, J. H. Lace no. 1233! Bashahr, J. H. Lace no. 314!; Sikkim, W. W. Smith no. 4289!

2. Var. β **leiocarpum,** W. E. Evans; quae cum varietate α foliorum atque inflorescentiarum forma quadrat, carpellis glaberrimis vel apicem versus parcissime hispidis differt.

Geum elatum, Wall. Cat. no. 711 p. p.

ALPINE HIMALAYA; apparently much less frequent than var. α. I have seen only two specimens, one distributed under Wall. Cat. no. 711 and another collected by J. R. Reid, Esqre., C.I.E.; both are in the Edinburgh Herbarium and have almost or quite glabrous achenes. Unfortunately, in each case, the place of origin is uncertain.

Var. γ **humile,** Royle (Plate No. CXCVI); foliorum pinnis approximatis, caulibus floriferis 1-(rarissime 2-) floris folia haud vel paulo excedentibus, carpellis glabris vel subglabris ab var. *typico* divergit.

Geum elatum var. *humile,* Hook. f. Flor. Brit. Ind. ii, p. 343.

Geum adnatum, Wall. Cat. no. 712.

Sieversia elata, var. *humilis,* Royle Ill., p. 207.

Sieversia humilis, Royle MSS, apud Royle l.c.

Potentilla adnata, Wall. MSS. apud Wall. Cat.; Lehm. Pugill. ix, p. 9; Revis. Potentill., p. 47, t. 17.

ALPINE HIMALAYA :—Nepal, Wallich no. 712!; Sikkim, W. W. Smith no. 3174!

Key to the Varieties of Geum elatum, Wall.

Lateral lobes of the radical leaves generally distant, the reduced alternate ones generally numerous; flowers 2–6; plant tall-growing (Plate No. CXCV).

Achenes densely hispid. . . . var. α *typicum*.

Achenes glabrous or very sparsely hispid above . . . . var. β *leiocarpum*.

Lateral lobes of the radical leaves more close-set, the reduced alternate ones fewer; flowers generally solitary; plant low-growing. (Plate No. CXCVI). . . var. γ *humile*.

EXPLANATION OF PLATES.

Illustrating Mr Evans' Paper on the Varieties of Geum elatum, Wall.

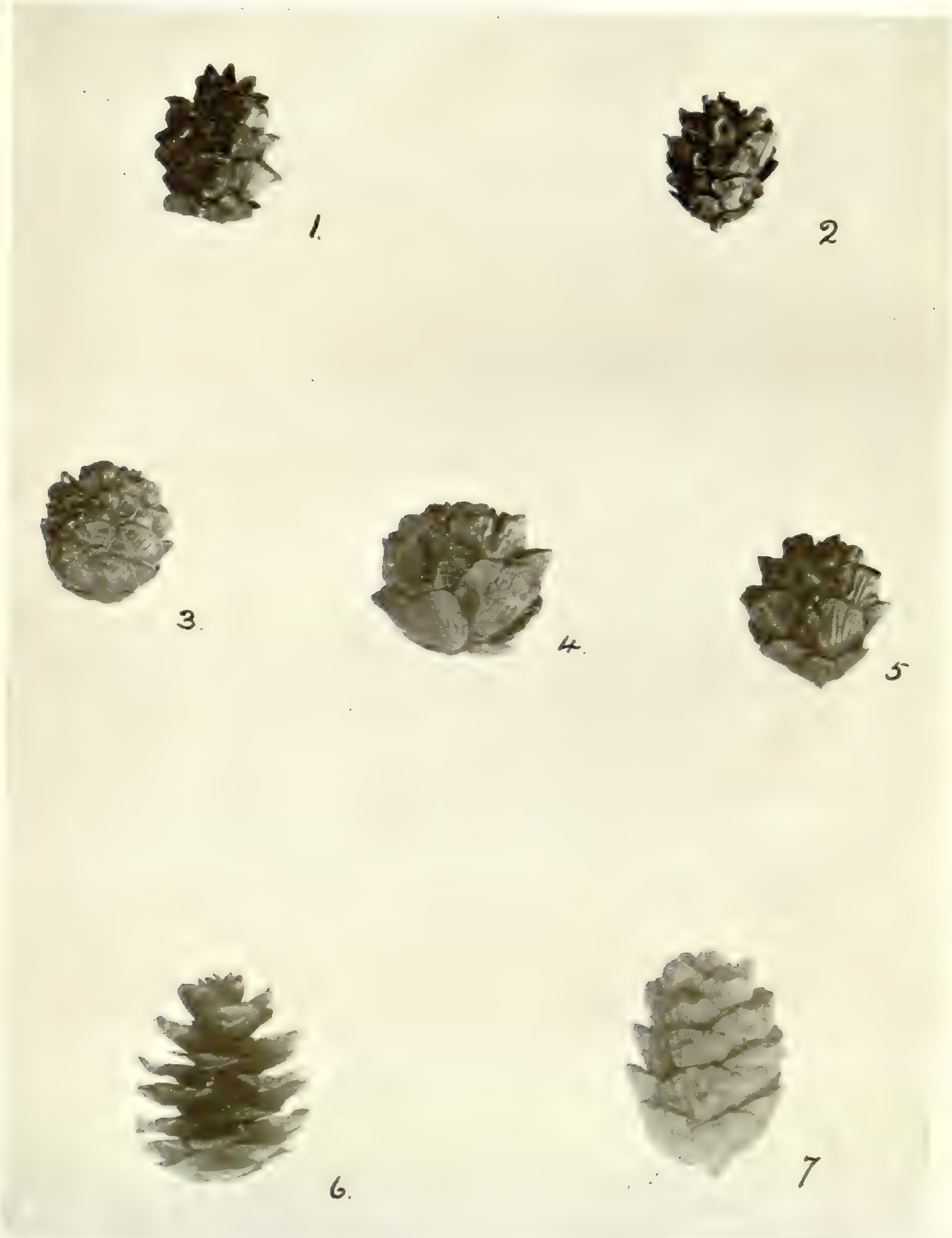
(Photographs by R. M. Adam, Assistant in Studio, Royal Botanic Garden, Edinburgh.)

PLATE NO. CXCV.—*G. elatum*, Wall. var. ***typicum***, W. E. Evans. Wall. Cat no. 711 in Herb. Kew. Whole plant × ½, showing form of leaves and inflorescence.

CXCVI.—*G. elatum*, Wall. var. ***humile***, Royle. Type of *G. adnatum*, Wall. in Herb. Kew. Whole plant slightly reduced, showing form of leaves and inflorescence.

(108D Wt 105/S.O.P.177 375 8/23 J.P G7

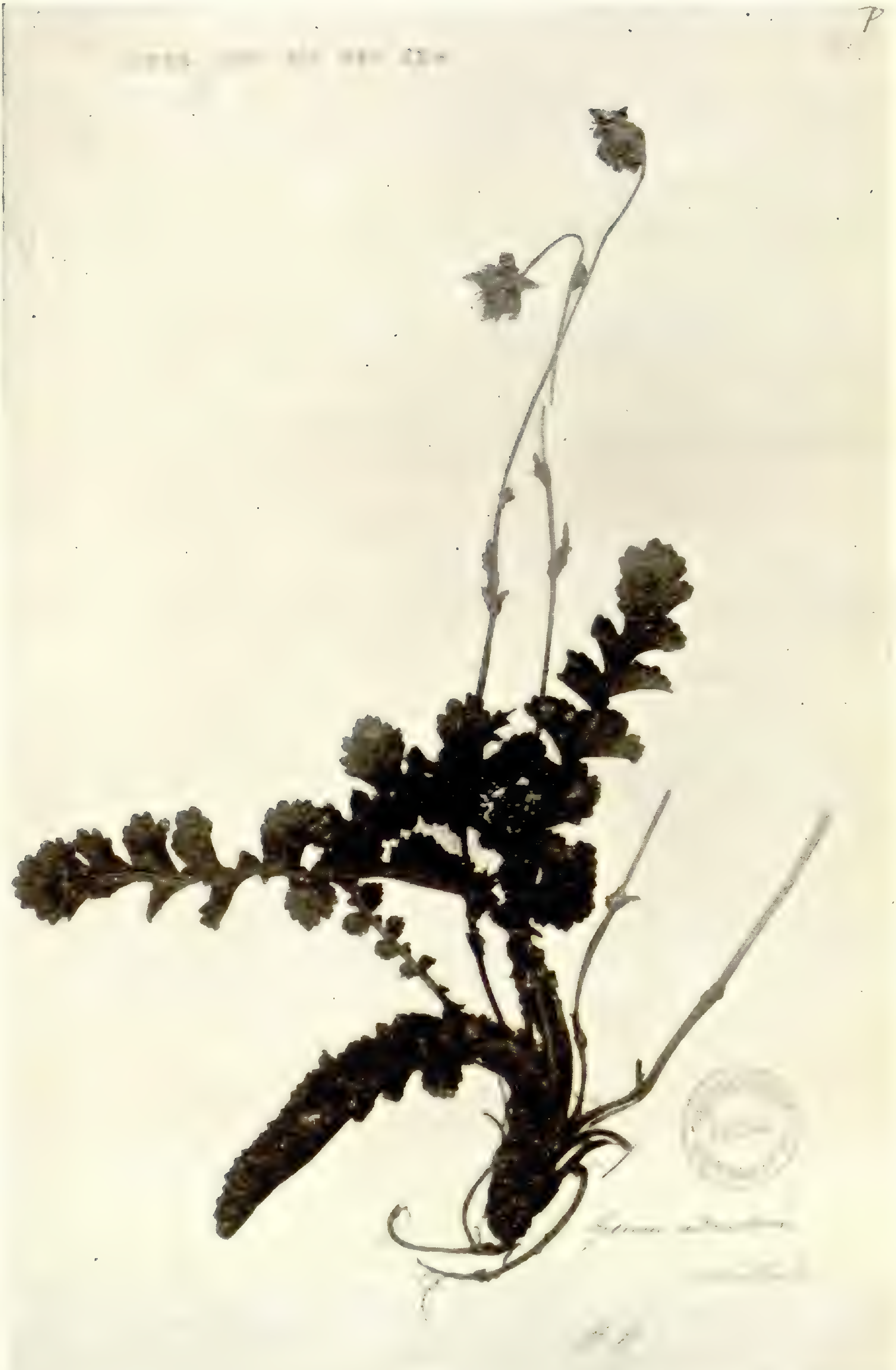
PLATE CXCIV.



Chinese Species of Tsuga—Cones.

111 Geum elatum Wall
Himalaya [illegible]
2 [illegible]
Sieversia
elata, Royle.

Geum elatum, Wall. var. typicum, W. E. Evans.



Geum elatum, Wall, var. humile, Royle.

New Primulaceae

BY

PROFESSOR WILLIAM WRIGHT SMITH

AND

GEORGE FORREST.

THE following new species and varieties are described along with notes on a few previously published :—

Primula Agleniana, Balf. f. et Forrest, var. alba, Forrest (Nivalis), p. 32.
,, aromatica, W. W. Sm. et Forrest (Malvacea), p. 32.
,, atrotubata, W. W. Sm. et Forrest (Malvacea), p. 33.
,, aurantiaca, W. W. Sm. et Forrest (Candelabra), p. 34.
,, brachystoma, W. W. Sm. (Candelabra), p. 35.
,, caldaria, W. W. Sm. et Forrest (Farinosae), p. 35.
,, caldaria, W. W. Sm. et Forrest, var. nana, W. W. Sm. et Forrest (Farinosae), p. 36.
,, calliantha, Franch. var. nuda, Farrer (Nivalis-Calliantha), p. 36.
,, Coryana, Balf. f. et Forrest (Nivalis), p. 37.
,, Dickieana, Watt, var. Pantlingii (King) (Obtusifolia?), p. 39.
,, Dickieana, Watt, var. chlorops, Forrest (Obtusifolia?), p. 39.
,, dumicola, W. W. Sm. et Forrest (Obconica), p. 40.
,, effusa, W. W. Sm. et Forrest (Malacoides), p. 40.
,, eucyclia, W. W. Sm. et Forrest (Geranioides), p. 41.
,, gentianoides, W. W. Sm. et Ward (Petiolaris), p. 42.
,, ingens, W. W. Sm. et Forrest (Nivalis), p. 43.
,, lacerata, W. W. Sm. (Carolinella), p. 45.
,, leucops, W. W. Sm. et Ward (Nivalis), p. 46.
,, lichiangensis, Forrest, var. hapala, Balf. f. et Forrest (Cortusoides), p. 47.
,, Littoniana, Forrest, var. robusta, Forrest (Muscarioides), p. 47.
,, malvacea, Franch. var. alba, Forrest (Malvacea), p. 48.
,, malvacea, Franch. var. intermedia, Forrest (Malvacea), p. 48.
,, melanops, W. W. Sm. (Nivalis), p. 48.
,, microstachys, Balf. f. et Forrest (Malvacea), p. 49.
,, monantha, W. W. Sm. et Forrest (Macrocarpa), p. 49.
,, oxygraphidifolia, W. W. Sm. et Ward (Auriculata), p. 50.
,, Pauliana, W. W. Sm. et Forrest (Geranioides), p. 51.
,, pseudosikkimensis, Forrest (Sikkimensis), p. 52.

[Notes, R.B.G., Edin., No. LXVIII, November 1923.]

Primula tapeina, Balf. f. et Forrest (Suffruticosa), p. 52.
„ Valentiniana, Hand.-Mzt. (Amethystina?), p. 53.
„ violacea, W. W. Sm. et Ward (Muscarioides), p. 54.
„ werringtonensis, Forrest (Obconica), p. 55.
Omphalogramma elegans, Forrest, p. 55.
„ minus, Hand.-Mzt., p. 56.

1288 **Primula Agleniana,** Balf. f. et Forrest var. **alba,** Forrest.

A typo floribus albis variat; in specie nobili fortasse mentione digna.

"S.E. Tibet:—Salween-Kiuchiang divide, Tsarong. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. Plant of 12–16 inches. Flowers fragrant, white, faintly flushed rose exterior. Moist alpine pasture on the margins of cane brakes. July 1921." G. Forrest. No. 20081.

It is possibly worth recording that the typical *P. Agleniana* was found in July 1905 on the Mekong-Salween divide, at an altitude of 11–13,000 ft., Lat. 27° 28′ N., under Forrest No. 479, an incomplete specimen which remained for long unidentified. See Notes R.B.G., Edin. VI. (1912) 37.

1293 **Primula aromatica,** W. W. Sm. et Forrest.

Species valde distincta cujus affinitas cum sectione Malvacea esse videtur; foliis in vivo carnosulis aromaticis, in sicco delicatissimis, scapo floribusque gracillimis ab affinibus facile cognoscitur.

Planta 7–12 cm. alta calcicola caespitosa glebam parvam formans radicibus permultis gracilibus. Folia pauca petiolo 3–5.5 cm. longo flexuoso pilis longis albidis densius ornato praedita; lamina plerumque 2.5–3.5 cm. longa atque fere aeque lata, late ovata, ad quartam partem 7–9-lobata, lobis rotundatis et nunc trilobulatis, apice rotundata, basi breviter cordata vel subtruncata, textura in sicco tenuissima, sparsim pilosula vel utrinque fere glabra, margine pilis glanduli-capitatis minutis ciliolata. Scapus ad 12 cm. altus folia plerumque bene superans pilis ut petioli indutus inflorescentiam 1–5-floram spiciformem gerens; intervalla inter flores 5–10 mm.; bracteae 5–7 mm. longae lineares vel e basi petioliformi lanceolatae vel anguste oblanceolatae, ad basim pedicelli positae vel nunc sub calyce subadnatae pilis glanduliferis minutis ciliolatae; pedicelli brevissimi vix 1 mm. superantes. Calyx circ. 6 mm. longus foliaceus fere ad imum in lobos lanceolatos acutos fissus glanduloso-pilosulus. Corollae tenuissimae roseae circ. 1.5 cm. longae tubus cylindricus 1 cm. longus flavidus pilis minutis conspersus, lobi anguste obovati emarginati glabri. Stamina in flore longistylo ad quadrantem tubi corollini inferiorem inserta antheris vix 1 mm. superantibus, in flore brevistylo paulo infra os posita. Ovarium subglobosum; stylus glaber in flore longistylo ad os pertinens, in flore brevistylo ad quadrantem tubi attingens; stigma capitatum. Fructus globosus apice valvis 5 dehiscens seminibus numerosis angulatis circ. 0.5 mm. longis.

"West China:—Goo-du Shan, Yunnan. Lat. 28° 16′ N. Long. 100° 12′ E. Alt. 9–10,000 ft. Plant of 3–5 inches. Flowers rose, tube green. Foliage fragrant. Moist situations on limy cliffs and slopes. July 1921." G. Forrest. No. 20568.

A most remarkable Primula for tenuity of foliage and flower—in the dried state at least—for both have the fragility associated with dried flowers of *Impatiens*. It is placed with some doubt in the series Malvacea, but the alternative seems to be a new section.

Primula atrotubata, W. W. Sm. et Forrest.

Species szechuanica ex affinitate *P. malvaceae*, Franch. a qua habitu minore, floribus saturate roseis, corollae tubo atropurpureo lineato, oculo kermesino inter alia divergit.

Planta 10–20 cm. alta. Folia petiolo laminam subaequante vel saepe multo breviore pilis albidis patentibus longis bene induto munita; lamina 3–7 cm. longa, 2.5–5 cm. lata, subovalis vel late ovata, apice rotundata, basi breviter cordata, margine grosse crenata atque ciliolata, textura in sicco tenuis, supra pilis conspersa, subtus ad costam nervosque dense pubescens, ceterum hic illic glabrescens. Scapus ad 20 cm. altus dense pubescens umbellas 2–3 superpositas in modum *P. malvaceae* gerens; bracteae 6–8 mm. longae lineari-lanceolatae foliaceae pubescentes ut pedicelli 8–13 mm. longi. Calyx 1 cm. saepe superans post anthesim accrescens, late cupularis pubescens atque glandulosus in lobos late ovatos acutos ad duas partes fissus. Corollae saturate roseae tubus anguste cylindricus calycem aequans vel nunc paulo superans infra medium paululo constrictus atropurpureus lineatus extra sparsim pubescens, annulus conspicuus, lobi 6–7 mm. longi obovati alte bilobulati. Stamina in flore longistylo ad tubi corollini partem constrictam inserta. Ovarium globosum parvum; stylus in flore longistylo vix ad os pertinens; stigma capitatum. Fructus haud maturus calycis tubo bene inclusus.

"West China:—Mountains east of Yung-ning, S.W. Szechuan. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 10–11,000 ft. Plant of 4–8 inches. Flowers deep rose with crimson eye. Dry stony meadows. July 1921." G. Forrest. No. 20508.

"Muli, S.W. Szechwan. Alt. 6–7000 ft. Flowers bright rose-pink, striped outside. In the bed of the Litang river under shrubs and in thick growth, well shaded. Calcareous soil. A species in which the calyx is larger than the flower! A very late flowering species. Though more advanced on 16.7.21 it was clearly not yet in full bloom. When properly out, it is a beautiful plant, the rich rose-pink and dark eye showing up against the foliage in striking manner. July 1921." F. K. Ward. No. 4351.

P. atrotubata is closely akin to *P. malvacea*, Franch. but we are unable to match it with any of the numerous collections of that species from Yunnan. When in flower the dark-coloured corolla-tube with longitudinal lines and the crimson eye serve for discrimination.

1412 **Primula aurantiaca**, W. W. Sm. et Forrest.

Species e grege Candelabra, habitu *P. burmanicae*, Balf. f. et Ward; a speciebus ejus sectionis flavidifloris calycis forma lobisque facile distinguitur; scapus fructiferus saepe decumbens apice gemmas foliosas profert.

Planta ad 25 cm. alta. Folia sat numerosa rosulata petiolata, majora 12–16 cm. longa, 2.5–3.5 cm. lata, oblanceolata apice plus minusve rotundata margine eroso-denticulata, deorsum in petiolum lamina duplo-breviorem alatum vaginantem sensim attenuata, in sicco tenuiter papyracea, glabra, utrinque nervis in sicco conspicuis, costa media lata; superficies infra pallidior obscure pulverulenta. Scapi 1–2 satis robusti ad 25 cm. alti glabri umbellas plerumque 6–12-floras 2–6-superpositas intervallis 2–3 cm. longis gerentes; bracteae 9–11 mm. longae lineares ad basim pulverulentae; pedicelli 6–8 mm. longi sub fructu erecti; scapi fructiferi nunc decumbentes gemmas bene foliosas radicantes proferentes. Flores saturate rubro-aurantiaci. Calyx anguste campanulatus circ. 7 mm. longus extra subatratus intus viridis in lobos 5 anguste oblongos 4 mm. longos apice acutos vel nunc obtuse 2–3-lobulatos divisus. Corollae tubus circ. 12 mm. longus angustus annulatus, lobi 4 mm. longi anguste obovati vel suboblongi emarginati. Antherae in flore brevistylo ad os corollae insertae. Ovarium globosum; stylus brevis calyce brevior, longus ad os corollae pertinens; stigma magnum capitatum. Capsula globosa ad 5 mm. diametro e tubo calycis ampliati paulo exserta seminibus 1 mm. diametro angulatis nigris papillatis.

"West China:—Chien Chuan—Mekong divide, Yunnan. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11,000 ft. Plant of 7–10 inches. Flowers deep ruddy-orange. Moist alpine pasture

by streams. July 1922." G. Forrest. Nos. 21497, 22318 (Sept. 1922 in fruit).

The following numbers are conspecific, representing a form with greener calyx and paler corolla but otherwise agreeing with the typical plant even in the presence of occasional rooting buds at apex of the scape :—

Same locality. Alt. 11 12,000 ft. Plant of 8-12 inches. July 1922. G. Forrest. Nos. 21501, 22287 (Sept. 1922 in fruit).

[illegible]

Primula brachystoma, W. W. Sm.

Species ex affinitate *P. serratifoliae,* Franch. a qua foliorum forma atque denticulatione, calycis lobis brevibus, corollae tubo aeque et anguste cylindrico, lobis corollinis brevibus subquadratis inter alia divergit.

Planta ad 20 cm. alta efarinosa epilosa. Folia petiolo vix discreto alato brevi suffulta; lamina 6–12 cm. longa, 1.5–2 cm. lata, oblanceolata vel sublanceolata, apice angustata atque breviter apiculata, basi sensim in petiolum decurrens, margine denticulis brevissimis induratis praedita, in sicco tenuiter papyracea, glabra. Scapus ad 20 cm. longus gracilis glaber umbellam simplicem 2-6-floram gerens; bracteae ad 6 mm. longae basi latiusculae lineari-lanceolatae acutae glabrae; pedicelli 5–10 mm. longi; flores plus minusve cernui. Calyx circ. 5 mm. longus anguste campanulatus glaber submembranaceus pallido-viridis lobis vix 1 mm. superantibus triangularibus indurato-apiculatis. Corollae flavae annulo valde distincto tubus aeque cylindricus circ. 8 mm. longus glaber, lobi circ. 4 mm. longi subquadrati breviter emarginati. Stamina ad medium tubum inserta. Stylus (? bene evolutus) vix calycem aequans; stigma magnum capitatum; ovarium globosum. Fructus deest.

"Upper Burma :—Shing Hong region, Burmo-Chinese frontier at 9000 ft. A few plants only as yet seen; in the wet precipitous grassy margin of a cascade in the lower alpine region but probably seeded down from a higher station. The flower is going to be golden yellow. June 1920." R. Farrer. No. 1635.

The affinity of the species seems to be with *P. serratifolia,* Franch. Although showing no sign of superposed umbels in the present state, for the specimens are of young plants, it is referred to the Candelabra series.

1555

Primula caldaria, W. W. Sm. et Forrest.

Species ex affinitate *P. Knuthianae,* Pax, specie shensiensi a qua habitu nunc triplo elatiore, bracteis basi gibbosis, calycis brevioris lobis angustioribus, corollae albae tubo e calyce magis exserto divergit.

Planta 15–50 cm. alta gracilis albo-farinosa glabra. Folia varia nunc maxima ad 25 cm. longa 3.5 cm. lata; lamina a petiolo vix discreta ad 10 cm. longa oblanceolata apice rotundata basi in petiolum aequilongum vel nunc longiorem alatum ad insertionem dilatatum sensim angustata, margine obtuse denticulata, in sicco membranacea, subtus dense albo-farinosa; nunc in speciminibus parvis folia multo minora saepe circ. 3.5 cm. longa, 6 mm. lata apice magis acutata, petiolo laminam haud aequante. Scapus ad 50 cm. altus flexuosus gracilis glaber sub inflorescentiam albo-farinosus umbellam 20–30-floram gerens; bracteae 6–8 mm. longae a basi lata lanceolatae acuminatae basi gibbosae; pedicelli 8–16 mm. longi erecti graciles nunc albo-farinosi. Calyx ad 5 mm. longus campanulatus albo-farinosus in lobos anguste lanceolatos acutos fere ad medium fissus. Corollae albae tubus ad 7 mm. longus cylindricus supra dilatatus annulatus, lobi circ. 3.5 mm. longi et lati obcordati emarginati. Stamina in flore brevistylo ad basim partis corollinae dilatatae inserta antheris 2 mm. longis ad corollae os pertinentibus. Stylus in flore brevistylo tantum 2 mm. longus calycem haud aequans, stigmate capitato. Capsula globosa 3 mm. diametro apice valvis dehiscens seminibus numerosis angulatis.

"West China:—Yang-dza Shan, Mekong-Salween divide, Yunnan. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 8–9000 ft. Plant of 6–20 inches. Flowers white, fragrant. Amongst bush herbage in the proximity of hot-water springs. May 1921." G. Forrest. No 20138.

var. **nana,** W. W. Sm. et Forrest.

Varietas pusilla alpina tantum 2–5 cm. alta.

"Yang-dza Shan. Alt. 11–12,000 ft. Plant of ½–2 inches. Flowers fragrant white or white flushed lilac. On boulders and dry stony pasture. April–May 1921." G. Forrest. No. 20140.

The above species appears to be the first member of the Farinosae (in the restricted sense) to occur in Yunnan. Its nearest ally is *P. Knuthiana,* Pax. The variation in size in the various specimens collected is remarkable—from dwarfs of an inch in height to plants of 20 inches. The bracts on the inflorescence do not all spring from the base but are arranged in a spiral series—and naturally the pedicels likewise.

Primula calliantha, Franch. var. **nuda,** Farrer mss.

Foliis bracteisque calyceque omnino efarinosis a typo recedit.

"Burma:—On the Moku-ji, Chimili and other passes. Alt. 11–13,000 ft. July 14th 1920." R. Farrer. No. 1721.

Mr Farrer has given the following note :—"The whole series on these alps represents not *P. calliantha* at all but the almost exactly similar but efarinose *P. nuda* which last year I only once saw and only in seed [No. 1052]. Here it abounds vastly on the heights sheeting the upper lawns in colour like the Arthritics of Europe. It varies like them too in tones of vinous amethyst or lavender, and, though the lobes are usually entire, specimens occur in which they are erose-dentate."

This at first sight looks very distinct but is not worthy of more than varietal rank. I find in other specimens of *P. calliantha* a tendency to loss of farina. In the Farrerian specimen the dense base of fleshy scale leaves shows within copious farina, although the ordinary leaves, scape, bracts and calyx are quite efarinose.

Primula Coryana, Balf. f. et Forrest mss. descr. W. W. Sm.

Species nobilis sectionis Nivalis atque ex affinitate *P. nivalis*, Pallas sed ab ea specie ejusque varietatibus corollae forma facile recognoscitur; quoad habitum atque pulchritudinem cum *P. Agleniana*, Balf. f. et Forrest comparanda.

Planta 35–45 cm. alta farinosa epilosa foliis sub anthesi bene evolutis, alabastri squamis plurimis 3–5 cm. longis 2 cm. latis in sicco tenuiter membranaceis cincta. Folia magna 20–36 cm. longa, 4–8 cm. lata, lanceolata vel oblanceolata, apice acutata nunc apiculata, basi in petiolum lamina breviorem ad 10 cm. longum 1–2 cm. latum pergamentaceum sensim angustata margine crebre atque subregulariter denticulata, dentibus hydathodo apiculatis, utrinque glabra, supra efarinosa vel fere nuda, infra farina albida vel pallido-sulphurea diu persistente undique induta, costa media lata rubida marginibus stramineis (in superficie inferiore conspicua) excepta. Scapus robustus supra dense farinosus umbellas 1–3 superpositas approximatas plerumque 4–9-floras gerens; bracteae ad 1.5 cm. longae lanceolato-acuminatae farina conspersae; pedicelli longiores 2.5–3.5 cm. longi subreflexi dense farinosi. Flores majores ad 4 cm. longi et lati in sicco, roseo-lavendulacei vel roseo-purpurei. Calyx ad 2 cm. longus tubuloso-campanulatus in lobos oblongos vel lanceolato-oblongos acutos ad 12 mm. longos ultra medium fissus extra sparsius, intra densius farinosus. Corollae magnae tubus infundibuliformis ad 2.3 cm. longus, parte inferiore tubulosa circ. 13 mm. longa, parte superiore late ampliata, glaber, extra farina conspersus, lobi ad 1.7 cm. longi, 1.5 cm. lati obovati emarginati nunc margine erosi, ad os latissimum farina copiosa impletum vix annulatus. Stamina in flore longistylo ad medium tubi inferioris inserta, in flore brevistylo

prope os posita; antherae 2.5 mm. longae. Ovarium subglobosum apice incrassatum atque rubido-tinctum; stylus (longus) circ. 8 mm. vix ad os pertinens (brevis) circ. 3 mm.; stigma magnum capitatum. Capsula cylindrica ad 2.7 cm. longa, ad 5 mm. lata, apice valvis brevissimis dehiscens, seminibus nigridis circ. 1 mm. diametro minute papillatis.

"West China:—Mountains around Mu-li; S.W. Szechuan. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12,000 ft. Plant of 14–18 inches. Under surface of foliage peculiarly aromatic when rubbed. Flowers fragrant, fleshy, soft rose-lavender; throat filled with light sulphur-coloured farina. Half-shady moist situations in conifer and mixed forest. June 1921." G. Forrest. No. 20448.

"Mountains east of Yung-ning, S.W. Szechuan. Lat. 27° 15′ N. Long. 101° E. Alt. 11–12,000 ft. Plant of 12–16 inches. Flowers fragrant, fleshy, soft rosy-purple; throat and tube yellowish-grey. Farina on under-surface of foliage aromatic. Margins of shady forests and thickets and on open meadows. June 1922." G. Forrest. No. 21383.

"Mountains N.E. of Muli, S.W. Szechuan. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 12,000 ft. Plant of 12–18 inches. Flowers fragrant, soft rosy-purple; throat and tube yellowish-grey. Farina on under-surface of foliage peculiarly aromatic. Margins of forests and amongst scrub in side valleys. June 1922." G. Forrest. No. 21413.

"Litang divide. Plant of 15–18 inches. Flowers very large, the petals more or less reflexed, nodding and pushed forward as in *P. vinciflora*. The colour varies from red through purple to violet, large central portion of the corolla silver-white with meal, which also powders the calyx, pedicels and upper portion of the inflorescence-axis. Under surface of leaves brilliant silver. In damp loam under Rhododendrons at the summit of the range. Seen in several places—not uncommon. Generally growing socially. Fragrant. The finest Primula I have ever seen, a truly magnificent Nivalid. June 1921." F. Kingdon Ward. No. 4181.

The following numbers are in fruit:—

"Mu-li mountains. Aug. 1918." G. Forrest. No. 16846.

"Mu-li mountains. Sept. 1918." G. Forrest. Nos. 16984, 17007.

"Mountains around Mu-li. Sept. 1921." G. Forrest. No. 20639.

"Mountains around Mu-li. Sept. 1922." G. Forrest. Nos. 22501, 22502.

A truly noble plant of the Nivalid section and very distinct from the other members of the series The specific name is

in honour of Reginald Cory, Esq., of Duffryn, Cardiff, to whom the Royal Botanic Garden is indebted for much material collected by George Forrest in Western China. The name was attached by Sir Isaac Bayley Balfour to the original fruiting specimens, but no description has been found.

Primula Dickieana, Watt var. **Pantlingii** (King).

"S.E. Tibet :—Salween-Kiuchiang divide, Tsarong. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14-14,500 ft. Plant of 2-3 inches. Flowers purplish-blue, throat and tube yellow. Moist alpine pasture. July 1921." G. Forrest. No. 19886.

"S.E. Tibet :—Salween-Kiuchiang divide, N.W. of Si-chi-to, Province of Tsarong. Lat. 28° 35′ N. Long. 98° 28′ E. Alt. 14-14,500 ft. Plant of 2-4 inches. Flowers deep lavender-blue, eye yellow, fragrant. On open moist alpine meadows. May 1922." G. Forrest. No. 21633.

In fruit. July 1921. G. Forrest. No. 19975; in fruit. Sept. 1921. G. Forrest. No 20271; in fruit. Oct. 1921. G. Forrest. No. 20856; in fruit. Oct. 1922. G. Forrest. No. 22814.

We are unable to separate these specimens collected in S.E. Tibet from the Himalayan *P. Dickieana*, Watt or its ally *P. Pantlingii* which latter seems to us to be only a 1-2-flowered variety of *P. Dickieana*. Hitherto *P. Dickieana* was known only from Sikkim where it is a comparatively rare species. Its foliage is peculiarly gland-dotted and the S.E. Tibet specimens show the same character. We would add here that *P. Valentiniana*, Hand.-Mzt. shows the same sunken glands and resembles *P. Dickieana* in foliage characters. In *P. Valentiniana*, however the flowers are pendent and the calyx entirely different. It has been referred by its author to the group of the Amethystinae. Its affinity is certainly with *P. Dickieana*, whatever the correct section may be.

1476 var. **chlorops**, W. W. Sm. et Forrest.

In eisdem locis crescens sed floribus minoribus plerumque 2-3-natis saturate purpureo-coeruleis, oculo viridi nec flavido praeditis divergere videtur.

"S.E. Tibet :—Salween-Kiuchiang divide, Tsarong, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 14,000 ft. Plant of 2-4 inches. Flowers deep purple-blue, eye green. On moist stony meadows. June 1922." G. Forrest. No. 21674.

A variety more removed from *P. Dickieana* than the var. *Pantlingii*.

1163 **Primula dumicola,** W. W. Sm. et Forrest.

Species ex affinitate *P. obconicae,* Hance atque *P. sino-Listeri,* Balf. f. a quibus foliorum forma atque aspectu, umbellis saepe superpositis divergit; quoad inflorescentiam *P. malacoidem,* Franch. suggerit sed est efarinosa atque indumento pilorum longorum albidorum differt.

Planta 10–30 cm. alta efarinosa. Folia ad 10 cm. longa; lamina late ovalis vel suboblonga, ad 5 cm. longa, ad 4 cm. lata, apice ambitu rotundata, basi plerumque breviter cordata nunc subtruncata, margine circ. 11-lobulata, lobulis inciso-dentatis, supra pilis articulatis albidis bene conspersa, intra praesertim ad nervos marginemque pilis eisdem praedita; petiolus laminam subaequans longiuscule albido-araneoso-pilosus. Scapi plures (2–5) ad 30 cm. alti sat robusti paulo flexuosi nunc basi ascendentes undique albido-pilosi umbellam plurifloram vulgo 6–10-floram saepe duas superpositas gerentes; bracteae lineares vel sublineares 4–7 mm. longae albido-pilosae, pedicelli 8–13 mm. longi stricti pilis albidis conspersi. Calyx 4–5 mm. longus in fructu (vix maturo) ad 6–7 mm. ampliatus campanulatus, viridis pilis longis albidis bene conspersus in lobos erectos triangulares acutos ad tertiam vel quartam partem fissus. Corollae roseae oculo albido-flavo tubus fere 7 mm. longus cylindricus glaber intra vix annulatus, lobi 3 mm. longi obcuneati apice emarginati. Stamina in flore brevistylo vix supra medium inserta atque stylum paululo superantia. Ovarium globosum; stylus brevis calyce brevior. Capsula haud matura globosa calycis tubo inclusa.

"S.E. Tibet:—Near Hsi-ku, on the descent from the Londre La to the Salween valley, Salween-Mekong divide, Yunnan. Lat. 28° 14′ N. Long. 98° 38′ E. Alt. 11,000 ft. Plant of 4–12 inches. Flowers fragrant, rose, with eye yellowish white. On the margins of thickets by streams. May 1922." G. Forrest. No. 21657.

1147 **Primula effusa,** W. W. Sm. et Forrest.

Species valde affinis *P. malacoidei,* Franch. et *P. Forbesii,* Franch.; a priore foliis carnosulis subreniformibus margine subregulariter dentatis, tubo corollae calycem duplo superante inter alia divergit; ab altera foliis longe petiolatis cordato-reniformibus margine valde diverso praeditis praeter alia signa distinguitur.

Planta ad 50 cm. alta, haud annua, radice sat robusta praedita, gemmas proferens. Folia numerosa cum petiolo ad 15 cm. longa; lamina majorum 4.5 cm. longa et lata, cordato-reniformis apice plus minusve rotundata, basi plerumque alte cordata, paululo sinuato-lobata, margine argute atque subregulariter dentata, utrinque sparsim hispida cito subglabrescens; petiolus ad 12 cm. longus laminam longe superans, pilis longiusculis bene conspersus. Scapi plures, nunc 8, ad 50 cm. alti flexuosi graciles glabri efarinosi umbellas superpositas 2–3 intervallis 5–8 cm. longis plurifloras (5–16-) gerentes; bracteae 3–4 mm. longae virides lineares glabrae; pedicelli ad 5 cm. longi inaequales substricti glabri vel subglabri. Calyx ad 4 mm. longus anguste campanulatus viridis sparsim albo-farinosus ad medium in lobos anguste lanceolatos acutos fissus, in fructu multo latior atque ad 5 mm. elongatus. Corollae lavendulaceo-roseae tubus 8 mm. longus anguste cylindricus extra flavidus vix annulatus, lobi ad 6 mm. longi obcuneati alte emarginati. Stamina filamentis brevissimis in flore longistylo infra medium tubi corollini inserta, in flore brevistylo circ. ad medium posita. Ovarium subglobosum; stylus longus inclusus vix ultra medium tubi corollini pertinens, brevis calycis tubo paulo brevior. Capsula globosa calycis tubo paululo exserta ab apice valvis 5 crustaceis dehiscens, seminibus 0.5 mm. diametro brunneis subdisciformibus nunc angulatis.

"West China:—Yangtze-Yung-ning divide; Yunnan. Lat. 27° 40′ N. Alt. 7–8000 ft. Plant of 10–20 inches. Foliage fleshy. Flowers lavender-rose, fragrant. Shady moist situations in thickets. June 1914." G. Forrest. No. 12446.

"West China:—On the descent to Fengkow on the Yangtze, Yunnan. Lat. 27° 35′ N. Long. 100° 30′ E. Alt. 11,000 ft. Plant of 6–12 inches. Flowers rose fragrant. Foliage fleshy, leathery. Shady moist banks on slate formation. Note—this is not the true *P. malacoides*—it was first collected in June 1913. May 1922." G. Forrest. No. 21236.

"West China:—Fengkow, Yunnan. By irrigation streams amongst grass and ferns in the cultivated terraces below Fengkow and just above the Yangtze. The rootstock appears to be perennial. Alt. 7000 ft. Flowers pinkish-mauve with white eye and orange tube, darkly striped. Leaves almost glabrous or with a few scattered bristly hairs; under surface powdered with white meal. Meal also on calyx, pedicels, etc. April 15th, 1922." Kingdon Ward. No. 5044.

In Mr Forrest's opinion too distinct a plant to be reckoned as a variety of either *P. malacoides* or of *P. Forbesii*. In its fresh condition the leaves are succulent like the leaves of some of the Diptera Saxifrages but dry to a very thin consistency. It is found only on moist slate formations.

1115 **Primula eucyclia**, W. W. Sm. et Forrest.

Species inter congeneres chinenses facile distincta atque cum *P. vaginata*, Watt specie himalayensi tantum comparanda; ab illa foliis textura tenuioribus magis regulariter orbiculatis, floribus 1-3-natis plerumque binis, corollae tubo atque limbo fere duplo majoribus divergit; petiolis basi manifeste vaginantibus species hae duae conspicuae.

Planta perennis ad 8 cm. alta rhizomate elongato anguste cylindrico basibus foliorum delapsorum bene obsito. Folia saepe ad 12, alia petiolo ad 4 cm. longo basi vaginante praedita, alia (minora) petiolo vix 2 mm. longo munita sed vagina lata ad 1 cm. longa et 4 mm. lata margine ciliolata instructa; lamina vulgo 2.5 cm. diametro, ambitu orbicularis, basi cordata, ad medium subseptemloba, lobis ad trientem incisis, lobulis acutiusculis, supra minute puberula, sub lente quasi scabridula, infra pallidior glabra vel subglabra, margine minute ciliolata. Scapus ad 8 cm. altus gracilis folia superans minutissime puberulus umbellam plerumque bifloram gerens; bracteae 2-4 lanceolatae 3-4 mm. longae acutae minute ciliolatae; pedicelli graciles 7-9 mm. longi minute puberuli. Calyx late campanulatus circ. 5 mm. longus ad medium fissus glaber vel subglaber; lobi ovati obtusiusculi margine minutissime ciliolati. Corollae pallide roseae tubus cylindricus fere 1 cm. longus ore annulatus; limbus 1.6-1.8 cm. latus in lobos obovatos 4-5-dentatos dentibus truncatis divisus. Stamina in flore longistylo calycem paululo superantia. Ovarium subglobosum; stylus in flore brevistylo calycem aequans, in flore longistylo ad summum corollae tubum attingens; stigma parvum capitatum. Fructus e calyce haud aucto vix exsertus subglobosus apice valvis 2-5 dehiscens; semina pauca 1 mm. diametro paulo complanata minute areolata.

"S.E. Tibet:—Province of Tsarong, Salwin-Kiuchiang divide, N.W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 28′ E. Alt. 14,000 ft. Plant of ½-2½ inches; perennial. Flowers pale shell-pink. On rocks and stony alpine meadows. May 1922." G. Forrest. No. 21632.

"Lat. 28° 20′ N. Long. 98° 27′ E. On open alpine meadows. In fruit. July 1921." G. Forrest. No. 19868.

"Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14-15,000 ft. In fruit. Sept. 1921." G. Forrest. No. 20270.

This species is the Chinese representative of the Himalayan *P. vaginata*, Watt. As in that species the leaves are markedly dilated at the base into a broad vagina. *P. eucyclia* is a slenderer plant than the Himalayan with fewer but much larger flowers.

Primula gentianoides, W. W. Sm. et Ward.

Species anomala cujus affinitas nobis dubia est; scapis cuique plantulae 1-4 ebracteatis unifloris, floribus magnis praecocibus, corollae lobis valde elongatis integris, staminibus styloque non vel vix calycis tubum superantibus inter alia signa bene conspicua.

Planta sub anthesi ad 6 cm. alta epilosa efarinosa basi squamis carnosulis 1–1.5 cm. longis obsita radicibus crassiusculis praedita. Folia sub anthesi haud bene evoluta petiolo alato laminam subaequante praedita; lamina circ. 1.5 cm. longa, vix 1 cm. lata, late spathulata, apice rotundata, basi in petiolum sensim angustata, integra vel subintegra, carnosula atroviridis glabra. Scapi 1–4, longitudine flores aequantes sub calyce sensim ampliati uniflori axillares glabri. Flores in sicco 3 cm. longi erecti glabri pallido-coeruleo-violacei. Calyx 8–9 mm. longus late tubulosus viridis textura tenuis glaber in lobos ovatos erectos apice rotundatos fere ad medium fissus. Corollae textura gracillimae tubus 11–12 mm. longus late cylindricus supra paululo dilatatus extra glaber, lobi 17–18 mm. longi oblanceolati medio 8 mm. lati apice rotundati integri; os exannulatus sed capillis longiusculis delicatis munitus ut tubus intus. Stamina in flore longistylo tantum 2 mm. a basi tubi corollini remota, in brevistylo calycis tubum paululo superantia, antheris circ. 1.5 mm. longis. Stylus longus circ. 5 mm., brevis vix 3 mm. superans; stigma capitatum; ovarium globosum placenta ut videtur pulvinato-discoidea, seminibus immaturis multis. Fructus deest.

"West China:—Yungning, N.W. Yunnan. Alt. 12–13,000 ft. Flowers pale bluish violet with no meal. Leaves glabrous with no meal. In open grassy meadows along the summit of the forested range. 25th April 1922." F. K. Ward. No. 5088.

A very peculiar species. The plant is dwarf but the flowers are large and precocious. There may be one to four scapes to each plantlet and the scapes are single-flowered and ebracteate. The habit in some ways recalls *P. sonchifolia*, Franch., but the structure of the flower is very different. The one-flowered ebracteate scapes lead mechanically to *Omphalogramma* but the calyx and corolla do not accord with that genus; there is, moreover, the want of any indumentum; the inside of the tube is lined with very fine but longish hairs but not forming a tuft in the throat as in the Bella section. It may be placed provisionally in the Petiolaris section. The placenta is broad and convex with the seeds lying upon it. This may point to it being an aberrant Petiolaris (cf. Balf. f. in Notes, R.B.G., Edin. IX. (1916) p. 175 sub *P. hylophila*.)

Primula ingens, W. W. Sm. et Forrest.

Ex affinitate *P. russeolae*, Balf. f. et Forrest et *P. sinonivalis*, Balf. f. et Forrest a quibus habitu multo elatiore, scapo pedicellisque dense luteo-farinosis, floribus pernumerosis divergit; omnes pro subspeciebus *P. nivalis*, Pall. fortasse rectius aestimari debent.

Planta florifera ad 50 cm. alta vel ultra, in fructu ad 90 cm. attingens, farinosa epilosa radicibus multis crassis; foliorum rosula sub anthesi bene evoluta, alabastri squamis plurimis ad 8 cm. longis, 3 cm. latis rubidis in sicco tenuiter membranaceis cincta. Folia magna ad 33 cm. longa, ad 5 cm. lata, lanceolata vel oblongo-lanceolata apice acutata vel obtusa, deorsum in petiolum late alatum attenuata margine integra vel nunc obscure denticulata, supra nuda, subtus sparsim luteo-farinosa cito subnuda; petiolus 8–9 cm. longus, ad 2 cm. latus, in sicco tenuiter membranaceus rubidus squamis basalibus subsimilis. Scapus robustissimus apicem versus dense luteo-farinosus umbellam multifloram vel duas superpositas gerens; bracteae 6–20 mm. longae lanceolatae acuminatae sparsim farinosae margine ciliolatae; pedicelli circ. 1.5 cm. longi, in fructu 4–8 cm. longi, reflexi vel superiores subreflexi (in fructu erecti), dense luteo-farinosi; anthopodium magnum. Calyx ad 12 mm. longus tubuloso-campanulatus ad medium in lobos lanceolatos vel suboblongos acutatos fissus extra fere nudus atro-viridis vel atro-brunneus intus dense farinosus venis distinctis longitudinaliter pererratus. Corollae purpureo-coeruleae tubus ad 1.5 cm. longus infundibuliformis glaber annulo distincto praeditus, lobi obovati vel subrotundati 1–1.5 cm. longi integri margine pilis minutis glanduli-capitatis muniti. Stamina in flore longistylo ad partem tubi corollini quartam inferiorem inserta antheris circ. 2.5 mm. longis. Ovarium subglobosum in dimidio superiore incrassatum atque rubro-tinctum; stylus (longus) 7–8 mm. longus haud exsertus; stigma capitatum. Capsula cylindrica 1.5–2 cm. longa e calyce venoso exserta straminea apice valvis dehiscens seminibus circ. 1.5 mm. longis brunneis spongiosis.

"West China:—Bei-ma Shan, Yunnan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. Plant of 12–20 inches. Flowers fragrant soft purple-blue with grey eye. Open stony meadows by streams. June 1921." G. Forrest. No. 19849.

"Bei-ma Shan. Plant of 2½–3 ft. In fruit. Flowers shades of lavender and purple-blues, occasionally pale rose; fragrant. On moist pasture by streams. This is the most robust and one of the most beautiful Nivalid Primulas I know. Sept. 1921." G. Forrest. No. 20397.

"Na-shu-to Shan, Mekong-Yangtze divide, Yunnan. Lat. 28° 30′. Long. 99° 12′ E. Alt. 14,500. Plant of 2–2½ ft. In fruit. On open meadows by streams. Oct. 1921." G. Forrest. No. 20617.

The above plant appears to come nearest *P. sino-nivalis* and *P. russeola*. In habit it has a strong resemblance to the white-flowered *P. chionantha*, Balf. f. et Forrest. With these it must be placed as one of the many members of the aggregate *P. nivalis*, Pall. It should prove a magnificent species in cultivation if as amenable as *P. chionantha*.

150

Primula lacerata, W. W. Sm.

Species burmanica affinis *P. Veitchianae*, Petitm. atque *P. pirolaefoliae*, Lévl. (quae fortasse sunt eadem); glandulae peculiares in bracteis et calycibus et corollis plantarum supra citatarum in *P. lacerata* omnino desunt; foliorum textura atque corollae laciniis insuper ab eis removitur.

Planta 15–18 cm. alta scapis 3–9 folia longe superantibus. Folia petiolo 2–6 cm. longo minute puberulo praedita; lamina 2–4.5 cm. longa et lata, orbicularis vel suborbicularis, apice rotundata, basi breviter cordata nunc vix cordata, margine obscure crenato-dentata, textura chartacea, subtus subglauca utrinque glabra. Scapi axillares ad 18 cm. alti minutissime puberuli 3–7-flori; bracteae 3–4 mm. longae anguste lanceolatae subglabrae (nonnunquam singula ex involucro longe petiolata atque laminam 1–2 cm. diametro gerens); pedicelli circ. 1 cm. longi, in fructu ad 2.5 cm. elongati, dense furfuraceo-puberuli; flores erecti fragrantes lavendulaceo-coerulei oculo aurantiaco. Calyx circ. 7 mm. longus anguste campanulatus minutissime puberulus vel subglaber in lobos ovatos subacutos vel obtusiusculos circ. 3 mm. longos fere ad medium fissus. Corollae tubus calycem paululo superans cylindricus, annulus distinctus convolutus, lobi circ. 8 mm. longi anguste obovati bilobi lobulis ipsis pectinato-incisis. Stamina in flore longistylo multo supra medium tubi corollini inserta, antheris circ. 1 mm. longis ad annulum pertinentibus, in flore brevistylo antherae ex ore exsertae. Stylus in flore longistylo ex ore saltem 3 mm. exsertus, in flore brevistylo calycem paululo superans. Capsula fere matura globosa seminibus multis angulatis; dehiscentiam non observavi.

"N.W. Burma:—Between Shingrup Chet and Akhyang. Alt. 7,500 ft. On ledges of hard shale bluffs, on moss on dead trunks and on pathside banks of the uppermost rain-forest or lowest alpine. Flowers almost over by April 15th, in shades of lavender-blue with an orange eye, very fringy and sweetly scented like *P. farinosa*. Range seems limited, no sign of it was seen on the east side of the pass and it was only found within a very small belt of the western. Seen again on one little wet granitic cliff-gully at 8000 ft. on the wooded crest

(Kum la Bum) between Kenglungpu and Salangpa, in full flower and character. Its beauty is remarkable and its flower-form so very unstable that it should develop widely in cultivation. The eye can be a solid ring of orange or a mere many-rayed corona with a penumbra of pallor. Note too the far exserted style. Nowhere seen in the woods of the Upper Akhyang. April 1920." R. Farrer. No. 1512.

A very beautiful species not yet in cultivation. It has no affinity with any Himalayan or Burmese species known to me but comes very near to the Szechwan *P. Veitchiana*, Petitm. as well as the eastern Yunnan plant described by Léveillé as *P. pirolaefolia*. Of this last I have ample material; of *P. Veitchiana* only a scrap. But both are characterised by peculiar internal glandular areas in the bracts and calyx-lobes while the corollas of both are sprinkled with dark glandular dots. Microscopic examination confirms the glandular nature of these marks which are visible from without. *P. lacerata* is devoid of these but its close relationship with the Chinese plants is undoubted. *P. Veitchiana* and *P. pirolaefolia* appear to me to be the same species but unfortunately my material of the former is very limited. These plants appear to be connected with the section *Carolinella* in which they are placed provisionally. They agree with one another in the laciniation of the corolla-lobes—not simply emarginate as in the typical members of that section.

Primula leucops, W. W. Sm. et Ward.

Ex affinitate *P. atuntzuensis*, Balf. f. et Forrest et *P. sinoplantagineae*, Balf. f.; planta nana sectionis Nivalis; foliis angustissimis, floribus pro planta magnis, corollae oculo magno albo bene notata.

Planta dense caespitosa ad 6 cm. alta, in fructu nunc vix accrescens, nunc paulo altior, pallido-luteo-farinosa. Folia 2–3 cm. longa, 3–5 mm. lata, petiolo vix discreto alato praedita, sub anthesin vix omnino evoluta; lamina lineari-lanceolata vel anguste lanceolata, acuta vel subacuminata, marginibus revolutis obscure crenato-denticulata, subtus farinosa. Scapus foliis duplo longior umbellam 2–5-floram gerens; bracteae 4–5 mm. longae pedicellos plus minusve aequantes basi latae lanceolatae acutae vel acuminatae virides vel nunc purpurascentes leviter farinosae. Calyx circ. 8 mm. longus cylindricus atropurpureus intus dense farinosus in lobos oblongos subacutos ultra medium fissus. Corollae lilacinae vel purpureae oculo valde conspicuo tubus circ. 1 cm. longus supra calycem ampliatus, lobi subrotundati 1 cm. diametro integri. Stamina in flore brevistylo supra medium tubum inserta antheris 1.5 mm. longis ab ore 2 mm. remotis. Stylus in flore brevistylo vix calycis tubum superans. Capsula cylindrica 1.5 cm. longa.

"West China :—Gu-ja-la, Muli district, S.W. Szechwan. Alt. 15-16,000 ft. Flowers various shades of mauve, lilac and purple but always with white eye. Fragrant. On open alpine slopes. May 1922." F. K. Ward. No. 5133.

The aggregate *P. nivalis,* Pall. and its allied species appear to be prolific in West China in the development of various subspecies and varieties. At one extreme there are tall plants such as *P. ingens*, attaining 3 ft. in the fruiting stage and at the other dwarf plants such as *P. atuntzuensis, P. brevicula, P. minor, P. petraea,* and *P. rigida. P. leucops* finds a place with these last.

Primula lichiangensis, Forrest var. **hapala,** Balf. f. et Forrest.

Varietas foliis subtus plus minusve dense albido-araneoso-tomentosis a planta typica divergens.

"West China :—Mountains east of Yung-ning, S.W. Szechuan. Lat. 27° 48′ N. Long. 101° E. Alt. 12–13,000 ft. Plant of 8–12 inches. Flowers fragrant, dark purple-rose, eye orange. On ledges of dry limestone cliffs. June 1922." G. Forrest. No. 21227.

"Eastern flank of the Bei-ma Shan, Yunnan. Lat. 28° 12′ N. Alt. 12–13,000 ft. On rocks and humus-covered boulders. June 1917." G. Forrest. No. 13848.

Primula Littoniana, Forrest var. **robusta,** Forrest.

A typo habitu robustiore, foliis majoribus, spica multo longiore ad 35 cm. longa apicem versus multo attenuata, floribus pallide lavendulaceis divergit.

"West China :—Mountains S.E. of Mu-li, S.W. Szechuan. Lat. 27° 30′ N. Long. 101° E. Alt. 11,000 ft. Plant of 2–2½ ft. Flowers pale purplish-blue. Open moist meadows on the margins of conifer forests. Aug. 1922." G. Forrest. No. 22179.

In fruit. Sept. 1922. G. Forrest. Nos. 22490, 23246.

This variety has been found so far only on the mountains around Mu-li. All the plants of *P. Littoniana* in the area are the same. In other areas where typical *P. Littoniana* occurs, this giant form has not been seen. It has been in cultivation, but, although its spike may attain sometimes 15 inches in length, its paler-coloured flowers do not make it so attractive a plant as the typical form.

Primula malvacea, Franch. var. **alba,** Forrest.

A typo floribus albis recedit.

"West China :—Sungkwei Range, Yunnan. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. Plant of 9–14 inches. Flowers fragrant, pure white with yellowish eye and tube. On open alpine meadows. July 1922." G. Forrest. No. 21557.

1253 **Primula malvacea,** Franch. var. **intermedia,** W. W. Sm. et Forrest.

Varietas nana *P. malvaceae*, Franch.; quoad habitum foliaque ad *P. blattariformem*, Franch. spectans sed inflorescentia *P. malvaceae* praedita; folia plerumque breviter petiolata; flores in umbellis superpositis sed, si nunc racemose dispositi, pedicellis elongatis muniti.

"West China :—Mountains of the Chungtien plateau, Yunnan. Lat. 27° 30′ N. Alt. 11,000 ft. Plant of 3–6 inches. Flowers very pale rose. Open stony pasture. July 1914." G. Forrest. No. 12586.

"Muli mountains, valley of the Litang, S.W. Szechuan. Lat 28° 12′ N. Alt. 10,000 ft. Plant of 4–9 inches. Flowers rose with eye yellow. Stony pasture and on ledges of cliffs. July 1918." G. Forrest. Nos. 16276, 16495, 16795.

"Muli. Alt. 9–10,000 ft. Flowers large for the size of the plant, delicate mauve with white eye. On shady limestone cliffs or in the woods below the cliffs. A charming little plant of refined colour not, however, fragrant. July 1921." F. K. Ward. No. 4521.

"Mountains east of Yung-ning, S.W. Szechuan. Lat. 27° 48′ N. Long. 101° E. Alt. 9–10,000 ft. Plant of 4–10 inches. Flowers rose. Open stony slopes and on cliffs and rocks in dry side valleys. June 1922." G. Forrest. No. 21425.

Primula melanops, W. W. Sm. et Ward.

Ex affinitate *P. sinopurpureae*, Balf. f. et *P. sinoplantagineae*, Balf. f. atque cum eis pro microforma *P. nivalis,* Pall. habenda. Ad *P. sinopurpuream* potius approximat sed minor, foliis subtus albido-farinosis, floribus saturate atro-purpureis oculo nigro ornatis, capsula magna cylindrica ad 2.5 cm. longa. Planta florifera 10–15 cm. alta, in fructu nunc ad 35 cm. elata.

"West China :—Litang divide, S.W. Szechwan. Alt. 15,000 ft. Flowers deep Tyrian purple, black in the centre, fragrant. On screes by glacier lake under the lee of rocks. June 1921." F. K. Ward. No. 4080.

"Gu-ja-la, S.W. Szechwan. Alt. 14–15,000 ft. Flowers deep Tyrian purple, the eye darker almost black. On open alpine slopes facing the sun. June 1922." F. K. Ward. No. 5132.

Another member of the aggregate *P. nivalis*, Pall.

Primula microstachys, Balf. f. et Forrest.

Planta nana affinis *P. blattariformi*, Franch. cujus pro varietate vel microforma rectius aestimanda; omnibus partibus multo minoribus a planta typica recedit.

Herba 7–20 cm. alta. Folia petiolo 5–10 mm. longo dense pubescente munita; lamina ad 3 cm. longa, ad 2 cm. lata, late oblonga vel ovalis, apice rotundata, basi late cuneata vel subrotundata, ut ea *P. blattariformis* induta. Scapus gracilis dense pubescens flores 3–12 racemose dispositos gerens; bracteae lineares ad 5 mm. longae; pedicelli 1–3 mm. longi. Calyx circ. 5 mm. longus. Corollae roseae oculo flavo tubus circ. 1 cm. longus anguste cylindricus gracillimus, lobi 5–7 mm. longi cuneato-obovati alte emarginati. Stamina in flore longistylo ad medium tubi corollini inserta. Stylus fere ad os annulatum pertinens.

"West China:—Mekong-Yangtze divide, Yunnan. Lat. 27° 40′ N. Alt. 9–10,000 ft. Plant of 3–8 inches. Flowers rose, eye yellow. Open stony pasture. Aug. 1914." G. Forrest. No. 13137.

A very different looking plant from *P. blattariformis*, Franch. at first sight, of dwarf habit and with very slender flowers and narrow corolla tube. But it will probably prove to be an extreme variety of that species.

Primula monantha, W. W. Sm. et Forrest.

Species affinis *P. gemmiferae*, Batal. atque *P. chrysopae*, Balf. f. et Forrest a quibus habitu multo minore, foliis fere orbiculatis, floribus solitariis recedit.

Planta nana 3–6 cm. alta radicibus paucis gracilibus. Folia 5–6 rosulam parvam formantia, petiolo alato latiusculo laminam plus minusve aequante praedita; lamina 7–9 mm. longa, 6–7 mm. lata, vel nunc minor, suborbicularis vel late spathulata, apice rotundata, basi subabrupte in petiolum contracta, margine dentibus ± 20 glanduli-capitatis instructa, textura carnosula, utrinque levissime albo-farinosa epilosa. Scapus ad 6 cm. longus flexuosus leviter albo-farinosus florem solitarium suberectum gerens; bracteae 2, major circ. 4 mm. longus, minor 2 mm., anguste lanceolatae acutae basi obscure gibbosae albo-farinosae ut pedicelli circ. 5 mm. longi. Calyx circ. 5 mm.

longus anguste campanulatus extra leviter farinosus intus densius in lobos ovato-lanceolatos acutos ad medium fissus. Corollae glabrae purpureo-roseae tubus circ. 9 mm. longus cylindricus supra sensim ampliatus, lobi obovati circ. 9 mm. longi emarginati. Stamina in flore longistylo ad medium tubum inserta. Ovarium globosum; stylus in flore longistylo ad os pertinens; stigma capitatum. Fructus deest.

"West China:—Mekong-Yangtze divide, Yunnan. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 14,500 ft. Plant of 1½–2½ inches. Flowers soft purplish-rose. On moist stony pasture. July 1921." G. Forrest. No. 19678.

We have little doubt of the affinity of this dwarf species with *P. gemmifera*, Batal. and *P. chrysopa*, Balf. f. et Forrest. It is distinguished easily by the rounded pluridentate small leaves and the solitary flowers. Only one collection was made and in the area the plant appeared to be very rare.

1649 **Primula oxygraphidifolia,** W. W. Sm. et Ward.

Species nana valde distincta cujus affinitas est cum *P. tibetica*, Watt, atque *P. fasciculata*, Balf. f. et Ward, a quibus foliis diversis, floribus multo majoribus solitariis (ut in *P. fasciculata*), calycis lobis obtusis praeter alia signa removitur.

Planta 3–5 cm. alta caespitosa efarinosa epilosa rhizomate parvo vaginis emarcidis foliorum vetustorum induto. Folia petiolo 8–18 mm. longo alato praedita; lamina variabilis nunc late ovata circ. 1 cm. longa et 7 mm. lata, nunc fere orbicularis vel ovato-lanceolata vel lanceolata, apice rotundata vel obtusa, basi rotundata vel in foliis angustioribus in petiolum angustata, margine integra vel dentibus 1–3 utrinque munita, textura in sicco carnosula, supra atroviridis subtus olivacea; folia anni prioris saepe persistentia et aspectu albo-spongiosa. Scapus ad 5 cm. longus axillaris ad medium bracteis 1–2 membranaceis circ. 2 mm. longis appressis lanceolatis acutis munitus. Calyx 6–7 mm. longus anguste campanulatus glaber efarinosus in lobos oblongos circ. 3 mm. longos et 1.5 mm. latos apice rotundatos nunc undulato-erosos fissus; lobi atque juga viridia intervallis pallido-viridibus submembranaceis. Corollae lavendulaceo-coeruleae glabrae tubus 11–12 mm. longus cylindricus supra paulo dilatatus, annulus valde distinctus, lobi 8 mm. longi obcordati alte emarginati. Stamina in flore longistylo calycis tubum medium haud superantia, in flore brevistylo paulo supra medium tubum corollinum inserta. Ovarium globosum; stylus longus vix ad os pertinens, brevis vix 1 mm. superans; stigma capitatum. Fructus (ex reliquiis anni prioris) haud exsertus apice valvis dehiscens.

"Muli Range. Flowers mauve or purplish, with pale yellow eye. No meal. On limestone precipices in nooks and crannies. Not common. Plants nearly always occur singly, with one large flower closely pressed against the rock. The previous year's leaves clothe the stem. 5th June 1921." F. K. Ward. No. 4182.

"Muli Range. Alt. 15,000 ft. Flowers solitary and without meal. Grows at high altitudes on the limestone cliffs in mossy crevices. 15th June 1922." F. K. Ward. No. 5222.

"Mountains around Mu-li, S.W. Szechuan. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12,000 ft. Plant of 1–2 inches. Flowers lavender-blue, eye grey-yellow. Open stony moist pasture by streams. July 1921." G. Forrest. No. 20473.

"Mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 12–13,000 ft. Plant of 1½–2 inches. Flowers fragrant, deep lavender, tube white. Open stony moist alpine meadows by streams. June 1922." G. Forrest. No. 21332.

A peculiar species akin to *P. tibetica,* Watt. The scapes are one-flowered. The leaves of the previous year are sometimes persistent, drying to a white spongy appearance.

1195

Primula Pauliana, W. W. Sm. et Forrest.

Species in sectione Geranioides inflorescentiis elongatis laxe racemosis secundifloris atque floribus pallide flavis valde conspicua.

Planta satis robusta 25–40 cm. alta. Folia 3–9 petiolo ad 18 cm. longo pilis articulatis sparsim instructo munita; lamina foliorum majorum ad 9 cm. longa, ad 8 cm. lata, orbiculari-ovata, basi cordata, textura in sicco tenuissima, ad partem quintam subseptemloba, margine grossi-dentata atque ciliolata, supra glabra vel hic illic pilis articulatis sparsim praedita, infra pallidior ad nervos rubidos basi radiantes pilis similibus bene conspersa. Scapus ad 40 cm. longus, gracilis flexuosus supra medium floriferus, pilis articulatis paucis atque pube minuta indutus; inflorescentia elongata laxe racemosa 20–30-flora secundiflora; bracteae 3–5 mm. longae plerumque lanceolatae vel sublineares integrae, nunc oblongae apice 3–4-lobulatae, pubescentes, nonnunquam pedicello suffultae; pedicelli 6–10 mm. longi ut scapus induti. Calyx 6 mm. longus minute puberulus ad medium in lobos triangulares acuminatos indurato-apiculatos fissus. Corollae pallido-flavae tubus aurantiacus circ. 11 mm. longus anguste cylindricus extra minutissime pubescens obscure annulatus; limbus circ. 16 mm. diametro lobis obovatis alte emarginatis. Stamina in flore longistylo in partem inferiorem tubi corollini disposita, tubum calycis vix superantia, in flore

brevistylo ad os corollinum inserta. Ovarium globosum; stylus subexsertus in flore longistylo, in flore brevistylo ovarium aequans atque vix tubum calycis superans, glaber; stigma capitatum. Fructus circ. 9 mm. longus e calyce haud aucto exsertus, oblongus, apice dentibus parvis dehiscens.

"West China:—S.W. Szechwan, in the mountains S.E. of Yung-ning. Lat. 27° 30′ N. Long. 100° 50′ E. Alt. 11–12,000 ft. Plant of 9–16 inches. Flowers pale yellow, eye and tube orange. Margins of thickets and forests and on open meadows. Aug. 1922." G. Forrest. No. 22073. Also Sept. 1922. No. 22452 in fruit.

A striking species of the Geranioides series and apparently the only yellow-flowered member of that series. The very elongate lax racemose inflorescence is also an easy mark for recognition. The specific name is in honour of the Very Rev. David Paul, D.D., LL.D., an enthusiastic student of the European *Primulaceae*.

Primula pseudosikkimensis, Forrest.

Microforma *Primulae sikkimensis,* Hook.; planta calcicola habitu humiliore, foliis textura minus flaccidis, floribus intensius atque laete luteis a planta typica divergit. Plantae ambae in provincia yunnanensi crescunt; *P. pseudosikkimensis* montibus calcareis Lichiang dictis favet.

"West China:—Lichiang Range, Yunnan. Lat. 27° 20′ N. Alt. 11–12,000 ft. Plant of 12–18 inches. Flowers bright canary-yellow, fragrant. In crevices and ledges of limestone cliffs. July 1906." G. Forrest. No. 2642.

"Eastern flank of the Lichiang Range. Alt. 12–15,000 ft. Plant of 6–9 inches. Flowers soft canary-yellow, fragrant. Alpine meadows. June 1910." G. Forrest. No. 5978. July 1913. No. 10329.

The plant from the Lichiang Range does not quite match the Himalayan species. Where dwarf plants occur in the Himalaya with increase of altitude, there is, at the same time, a decrease in size of flower. The Lichiang plant is of stout habit with large brightly-coloured flowers.

Primula tapeina, Balf. f. et Forrest.

Species affinis *P. Dubernardianae,* Forrest a qua habitu humiliore valde florifero, foliis supra farinosis infra albofarinosis utrinque multo minus glandulosis, calyce minore textura crassiore magis farinoso quam glanduloso, corolla alba divergit.

Planta nana suffruticosa ad 2.5 cm. ascendens densissime caespitosa glebam 30–60 cm. diametro formans, habitu *P.*

Dubernardianae, rhizomate valido lignoso foliis marcidis dense obsito. Folia petiolata 3.5–6 cm. longa; lamina 6–8 mm. lata, anguste lanceolata vel oblanceolata in petiolum anguste alatum glanduloso-puberulum laminam subaequantem angustata, supra fere plana leviter albo-farinosa vel nunc breviter glanduloso-pubescens, subtus dense albo-farinosa, apice obtusa, margine subintegra vel paulo repanda. Scapus ad 2.5 cm. altus, saepe multo minor, leviter farinosus vel breviter glanduloso-pubescens umbellam 2–6-floram gerens; bracteae 6–8 mm. longae lanceolatae vel suboblongae leviter farinosae atque pubescentes; pedicelli ad 1.5 cm. longi subglabri vel nunc pubescentes apicem versus farinosi. Calyx campanulatus circ. 6 mm. longus carnosulus albo-farinosus epilosus vel nunc breviter pubescens in lobos ovato-triangulares obtusos ad medium fissus. Corollae albae fauce luteo tubus 1 cm. paulo superans e calyce longe exsertus extra primo dense farinosus ut lobi obcordati 7 mm. longi alte emarginati. Stamina in flore longistylo ad quartam partem tubi inferiorem inserta, in flore brevistylo supra medium, antheris 2 mm. longis ab ore 2 mm. remotis. Ovarium globosum; stylus in flore longistylo circ. 6 mm. longus, in brevistylo vix 1.5 mm. aequans; stigma parvum capitatum. Fructus deest.

"S.E. Tibet:—Salween-Kiuchiang divide, Tsarong. Lat. 28° 40′ N. Cushion plant of 6–12 inches diameter. Flowers white with orange eye. On dry shady rocks and cliffs. June 1919." G. Forrest. No. 18367.

"Salween-Kiuchiang divide, Tsarong. Lat. 28° 40′ N. Long. 98° 15′ E. Cushion plant of 1 inch. One to two feet in diameter. Flowers white occasionally tinged rose, eye yellow. Dry situations on limestone cliffs. July 1919." G. Forrest. No. 18896.

P. tapeina presents a very distinct appearance from *P. Dubernardiana*, Forrest in its very compact habit and freedom of flowers. It differs moreover in the character and distribution of the meal, in shorter more fleshy calyx and in the white corolla long exserted from the calyx tube.

Primula Valentiniana, Hand.-Mzt. in Sonderabd. aus Anz. Akad. Wien, No. 26–27 (1922), p. 5.

A beautiful dwarf species of the section Amethystinae collected by Dr. Handel-Mazzetti and published in 1922. It was also collected by Farrer and by Forrest.

"Burma:—Chawchi Pass. Alt. 12–13,000 ft. A little beauty, sheeting the flat fine lawns of the high alps in broad expanses of colour. Flowers intense pure crimson, paling to

their rim and darkening bloomily up to the intense maroon blackness of the calyx. In number they are usually two, but can be as many (in one unique case) as 5, borne in a genuine head, though sometimes they almost look superimposed. July 14th 1920." R. Farrer. No. 1723.

"S.E. Tibet :—Salwin-Kiu Chiang divide. Lat. 28° 12′ N. Long. 98° 24′ E. Alt. 15-15,500 ft. Plant of 2-3 inches. Flowers fleshy, deep wine-crimson, identical in shade to the darker forms of *P. secundiflora*. On open, peaty alpine meadows. July 1921." G. Forrest. No. 20000. The same in fruit. Oct. 1921. G. Forrest. No. 20850.

"Salwin-Kiu Chiang divide, west of Chamatong, Tsarong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 13-14,000 ft. Plant of 1½-3 inches. Flowers solitary, occasionally in pairs, pendulous, fragrant, deep purple-crimson. Moist alpine meadows and moorland. June 1922." G. Forrest. No. 21792. The same in fruit. Oct. 1922. G. Forrest. No. 22931.

The leaves show remarkable resemblance to those of *P. Dickieana*, Watt both in shape and in the peculiar glandular markings on the under-surface.

Primula violacea, W. W. Sm. et Ward.

Species ex affinitate *P. apoclitae*, Balf. f. et Forrest atque *P. cyananthae*, Balf. f. et Forrest a quibus foliis utrinque minute scabridulo-pubescentibus inter alia divergit.

Planta 20-25 cm. alta foliis floribusque coaetaneis, squamis basalibus sub anthesin destituta. Folia 5-7 cm. longa, 1-1.7 cm. lata, petiolo laminam subaequante; lamina oblanceolata vel lanceolata, apice obtusa vel subrotundata, basi in petiolum alatum sensim angustata, margine nunc fere integra, nunc obscure denticulata, nunc irregulariter dentata, per totam superficiem minute scabridulo-pubescens in sicco tenuiter papyracea. Scapus ad 25 cm. altus gracilis epilosus sub inflorescentia albo-farinosus spicam florum sessilium pendulorum numero plerumque 6-10 parvam gerens; bracteae occultae lineari-oblongae albo-farinosae. Calyx cupularis 3-4 mm. longus ad medium in lobos inaequales alios (in spica exteriores) subrotundatos atro-purpureos extra farina sparsos intra dense farinosos alios (in spica interiores) oblongos pallidos utrinque farinosos fissus. Corollae saturate violaceae tubus cylindricus circ. 12 mm. longus supra leviter ampliatus exannulatus epilosus, lobi circ. 2.5 mm. longi subquadrati vix emarginati. Stamina in flore brevistylo prope os inserta. Ovarium globosum; stylus in flore brevistylo vix ad medium tubum attingens. Capsula deest.

"West China :—Litang-Yalung divide, S.W. Szechuan. Alt. 12 13,000 ft. Flowers deep violet, powdered inside with white meal, which is much more abundant than in the other Muscarioid primulas met with, so that the inside of the corolla is quite white. Bracts and upper calyx lobes light chocolate. On steep shaded slopes under Rhododendron, on the Yalung side of the divide, facing N.W. Also amongst boulders and scrub, sheltered but not shaded. Seen nowhere else but in this one spot, some 50 plants being discovered. July 1921." F. K. Ward. No. 4386.

Very much resembling *P. apoclita*, Balf. f. et Forrest, but with different leaves, closely beset on both sides with a very minute indumentum and lacking the long, white hairs so characteristic of the above species and its near allies.

Primula werringtonensis, Hort. Wallace. Descr. Forrest.

Microforma *P. obconicae*, Hance aestimanda; foliis basi altius cordatis textura tenuioribus minus hirsutis, floribus intensius coloratis, corollae tubo longiore et angustiore, e calyce longe exserto a typo recedit; in silvis umbrosis in montibus Likiang dictis in provincia yunnanensi atque prope Muli in eisdem locis in provincia szechuanica crescitur; forma silvicola occidentalis plantae typicae esse videtur.

"West China :—Lichiang Range, Yunnan. Lat. 27° 30′ N. Alt. 9 10,000 ft. Plant of 6 12 inches. Flowers rose; eye greenish-yellow, fragrant. On rocks in very shady ravines in mixed deciduous and coniferous forests. June 1913." G. Forrest. No. 10141.

"Mountains N.W. of Chien-Chuan, Yunnan. Lat. 26° 50′ N. July 1914." G. Forrest. No. 12767.

Lichiang Range. In fruit. G. Forrest. Nos. 10674, 11455, 15335.

1120 **Omphalogramma elegans,** Forrest.

Affinis *O. Soulici*, Franch. atque *O. Forrestii*, Balf. f. et fortasse prioris varietas rectius habenda; ab *O. Soulici* foliis ad anthesin vix bene evolutis supra longiuscule pilosis, calycis lobis sublinearibus acutis divergit; ab *O. minore*, Hand.-Mzt. autem valde affini fructu duplo majore recedit.

Planta sub anthesin 15 25 cm. alta, in fructu ad 60 cm. basi squamis circumdata. Folia plerumque post flores evoluta, nonnunquam fere coetanea, petiolo 3 4 cm. longo latiusculo pilis longis articulatis bene induto suffulta; lamina 4 6 cm. longa, 2-3 cm. lata, ovato-lanceolata vel ovata, apice obtusa, basi subabrupte angustata haud cordata, supra pilis longiusculis albidis bene praedita, infra sparsius ad costam nervosque, integra vel undulata ciliolata. Scapus dense pilosus, sub flore rufo-pilosus. Calyx circ. 9 mm. longus fere ad imum in lobos plerumque sex sublineares 1–1.5 mm. latos acutos fissus plus minusve dense pubescens. Corollae saturate purpureae tubus circ. 3 cm. longus cylindricus gradatim superne ampliatus extra pilosulus intra minute pubescens exannulatus, lobi obovati circ. 2 cm. longi et 1.5 cm. lati apice bilobulati vel sub-irregulariter incisi, undique et praesertim ad margines pilis articulatis glandulosis obsiti. Stamina 6 ad medium tubum inserta fere ad os attingentia filamentis liberis circ. 6 mm. longis glabris, antheris 6 mm. longis. Stylus glaber stamina paululo superans; stigma compresso-capitatum; ovarium ovoideum glabrum 6 mm. longum. Capsula 2 cm. longa, fere 1 cm. lata, cylindrica seminibus multis disciformibus ad 3 mm. diametro pallido-brunneis; planta ad tempus fructus maturi valde elongata, ad 60 cm. alta, petiolis nunc ad 12 cm. extensis, lamina anguste oblonga saepe 13 cm. longa.

"S.E. Tibet:—Kiuchiang-Salween divide, Tsarong. Lat. 28° 12′ N. Long. 98° 24′ E. Alt. 14,000 ft. Plant of 8–10 inches. Flowers deep purple-blue, tube yellowish. Alpine pasture on the margins of scrub and peaty bogs. July 1921." G. Forrest. No. 19979.

"The same in fruit. Plant of 2 ft. Oct. 1921." G. Forrest. No. 20857.

"West of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 12,000 ft. Plant of 6–9 inches. Flowers rich deep indigo-purple. On moist pasture on the margins of and amongst dwarf scrub. June 1922." G. Forrest. No. 21793.

In fruit. Oct. 1922. G. Forrest. No. 22812.

Omphalogramma minus, Hand.-Mzt. in Sonderabd. aus Anzeig. Akad. Wien, No. 26–27 (1923), p. 5.

The following appear to belong to the above recently described species collected in approximately the same area:—

"S.E. Tibet:—Salween-Kiuchiang divide, Tsarong. Lat. 28° 12′ N. Long. 98° 24′ E. Alt. 14–14,500 ft. Plant of 2–4 inches. Flowers throughout deep indigo-purple. Sheltered situations by streams amongst boulders. July 1921." G. Forrest. No. 20047.

"The same in fruit. Plant of 4–13 inches. Sept. 1921." G. Forrest. No. 20341.

"Salween-Kiuchiang divide west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 11–12,000 ft. Plant of 2–4 inches. Flowers rosy-purple. Open stony pasture amongst rocks by streams. June 1922." G. Forrest. No. 21795.

The same in fruit. Oct. 1922. G. Forrest. No. 22864.

The Leaf Glands of Dioscorea macroura, Harms.

BY

MATTHEW YOUNG ORR.

With Plates CXCVII-CXCVIII and Three Figures in the Text.

Dioscorea macroura, the peculiar leaf glands of which have been made the subject of an extended research by the writer, is a West African species, and a native of the tropical rain-forests in the region bordering on the Gulf of Guinea.

First collected by Zenker in the Cameroons in 1891, it was described as a new species by Harms in 1897. In his diagnosis, which appeared in the Notizblatt* at Berlin, Harms lays particular emphasis upon the extraordinary development of the acuminate leaf-apices, which he refers to in the following terms:—"überall tritt an den Blättern eine auffällig lange, schmale, mehr oder minder scharf abgesetzte, verdickte, schwanzartige Spitze hervor." This highly developed acumen presents its most interesting aspect, however, as a study in physiological plant-anatomy, for in its internal construction there appear features that are perhaps unique within the genus. Its chief point of interest lies in the complex glandular system, which traverses its length from base to apex, and which differs markedly from the "sunken glands" of other species, so fully described by Correns † in his work on the extra-nuptial nectaries of *Dioscorea*. Moreover, the mucilaginous secretion which fills the lumen of these glands harbours a species of bacterium, which is always present in great numbers, even in the living leaf.

This constant association of a bacterium with the secretory organs of *Dioscorea macroura* is not without a certain physiological import, and may prove to have a direct bearing on the economy of the plant. In this, and in certain other features, the glands of this species certainly show a striking resemblance to the "bakterienknoten" found in the leaves of other tropical plants, the essence of which, according to continental investigators, is a symbiotic union between the plant and a foliicolous micro-organism. Among the recorded examples of "bakterien-

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* See Notizbl. k. bot. Gartens u. Mus. zu Berlin, i. (1897), p. 265.

† C. E. Correns in Sitz. Ber. Math. Nat. Cl. Akad. Wien. xcvii., abt. 1 (1889), p. 651.

[Notes, R.B.G., Edin., No. LXVIII, November 1923.]

knoten," that of *Psychotria alsophila*, described by Boas,* has a particular interest in this respect, since this species was also collected by Zenker in the Cameroons.

The plants of *Dioscorea macroura*, from which the material for this investigation was obtained, have been in cultivation in the hot houses at the Royal Botanic Garden for some years; the tubers, from which the original plants were raised, having been brought from Nigeria by Dr. J. M. Dalziel, and presented by him to the Garden, along with other plants from the same area.

By adopting methods of intensive cultivation, in a moist atmosphere at a temperature ranging from 60 to 80 degrees Fahrenheit, it has been possible to raise, in successive seasons, plants of ever increasing size and vitality. Last year, the climbing stems of this species reached a length of over 18 metres, while the laminae of the largest leaves averaged 15 cms. long by 30 cms. broad, with leaf-tips fully 8 cms. in length. So far, the plants have never flowered, but, each year, they have been singularly prolific in the production of stem bulbils, and these have been made use of to propagate the species. The plant also perennates by means of a "nest" of root-tubers, which are said to be of a poisonous nature.

Reference has already been made to the remarkable length of the leaf-tip of this species, and it will not be out of place, at this stage, to describe more fully the distinctive external features which are so closely correlated with its glandular nature.

In the mature leaf, the acuminate tip is thicker than the lamina, is rigid, and tapers gradually from its base to the pointed apex, which is usually directed downwards. It may reach a length of 8 cms. and is about 5 mm. broad at its junction with the lamina.

The main veins of the leaf, from seven to nine in number, converge towards the apex of the lamina, and are continued outwards into this acumen, but only the inner veins remain visible at the extreme tip. Between the veins, the intervening tissue is slightly swollen, and forms a series of cushion-like ridges, from four to six in number, which are yellow-green in colour and quite opaque, in contra-distinction to the leaf-lamina, which is of a dark green colour and more or less translucent. They are, if anything, more prominent on the under side of the acumen, while, on the upper surface, each ridge is surmounted by a longitudinal slit, which communicates with the glandular interior. Viewed from above, the major portion of the surface of the acumen has the appearance of a series of more or less parallel ridges and shallow furrows, the former enclosing the glands, the latter roofing over the interposing veins.

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* F. Boas in Ber. d. deutsch. Bot. Gesell. xxix. (1911), p. 416.

The innermost pair of these glandular ridges extends practically the whole way from the base of the acumen to its apex, but those more lateral in position, by a repeated process of fusion with their immediate neighbours on the inner side, lose their identity in turn, until all are merged in the two innermost, persistent, glandular tracts.

Near the margins of the acumen, there project, from its upper surface, two thin flanges of tissue, which, in the older leaves, are directed outwards; but, in the younger leaves, the entire marginal portions of the acumen, from which the flanges arise, bend inwards, and completely enclose the upper surface and its longitudinal slits. As the leaf matures, the involuted margin gradually unfolds, and the slits become exposed.

The disparity in size between the young leaf and its acumen is very marked, for example, an undeveloped lamina, 7 mm. long, may be surmounted by a tail-like tip of 40 mm. in length. It does not follow, however, in spite of this disproportion in size, that the acumen necessarily becomes physiologically functional before the lamina reaches maturity, for it can be shown that, at this stage, the glands of the acumen are still in process of formation, and they only reach their highest state of development when the leaf-blade has expanded to more nearly its adult proportions.

Before proceeding to a consideration of the anatomy of this specialised organ, it might be well, at this point, to refer briefly to some of the technical methods employed.

The fluids used for the fixation of the parts to be examined were acetic-alcohol and chromo-acetic solution, and the material was embedded in paraffin, and sectioned by means of a microtome. By piecing together the serial sections obtained by cutting the material in different directions, it was possible to secure a mental picture of the convolutions of the glandular system, which was helpful in elucidating its construction. Various stains were employed, but perhaps the best results were obtained by using safranin, iron-alum haematoxylin with a contrasting stain, or a combination of gentian-violet and eosin. For the examination of the micro-organism present in the glands, the usual bacteriological methods of staining were followed.

The general anatomy of the leaf-tip can best be illustrated by reference to Plate CXCVII, which is a photograph of the transverse section of a medium-sized acumen, cut from near the apex. In this, the position of the glands, their relationship to the other tissues, and the general configuration of the organ are clearly demonstrated.

The glands are the dark-coloured areas, the contrast being produced by the deeply-staining secretion, which fills the glandular "pockets." It will be observed that only two of these glandular areas appear in the section, in place of the four or six referred to in the description of the external features of the acumen. This reduction in number is accounted for by the process of fusion which has been shown to take place between the outer and inner glandular ridges, resulting in the formation of the two combined glands, which alone persist in the distal portion of the acumen. Each gland is an elongated "pocket" in the mesophyll, which, in transverse section, has an extremely irregular outline, due to the frequent infoldings of the wall-layers. Its truly convoluted character, however, can only be fully appreciated by following its course through a series of longitudinal sections.

This "pocket" communicates with the upper surface of the acumen by way of the longitudinal slit, referred to above, the epithelium of which is epidermoid in character, and is strongly cuticularised, judging by its reaction to microchemical tests, and this property is shared, but to a less degree, by the cells which form the lining of the gland cavity itself. In the apical region of the acumen, from which this section was taken, the undulating character of the upper surface is not so pronounced as it is nearer the base, and the ducts, which, in the section, appear as narrow, winding canals, open here into a shallow channel formed by the two marginal flanges of parenchyma.

Internally, the opposing epithelial layers of the duct diverge abruptly to form the roof of the gland cavity, turning upwards in their course until the upper limits of the gland are reached, and thus partially enclosing a patch of mesophyll, roughly semicircular in outline, with a much-indented circumference due to frequent infolding of the limiting layer. From the extremities of the gland, the epithelium is continued downwards to form the curved floor of the crypta, from which the secretory tissue of the gland is developed.

The cells which compose this superficial layer, with the possible exception of those which form the basal attachments of the secretory elements, have not only their outer, but also their lateral walls cuticularised, somewhat after the manner of an endodermis, while their inner walls remain unaltered. Something of a similar nature was observed by Correns in the extra-nuptial nectaries of those species of *Dioscorea* that he investigated. This distribution of the cutin in the cell-walls was particularly obvious in sections stained with safranin or victoria blue.

Underlying this cutinised epithelium are two or three layers of smaller, thin-walled cells, which form a compact sheath, partially enclosing the gland, and separating it from the larger, chlorophyll-containing cells of the mesophyll. This sheath does not extend beyond the upper extremity of the gland.

The actual secretory tissue of the gland consists of a large number of vermiform, filamentous outgrowths, each the product of a single epithelial cell. These are produced solely from the basal epithelium, from which they project into the lumen of the gland, there becoming intertwined to form a tangled plexus, the interstices of which are filled with a tenaceous fluid, possessing a strong affinity for such stains as corallin, Hoffman's and methylene blue. In the living state of the plant, this fluid forms a medium, which appears to be eminently suited to the growth and development of the bacterium which abounds in it.

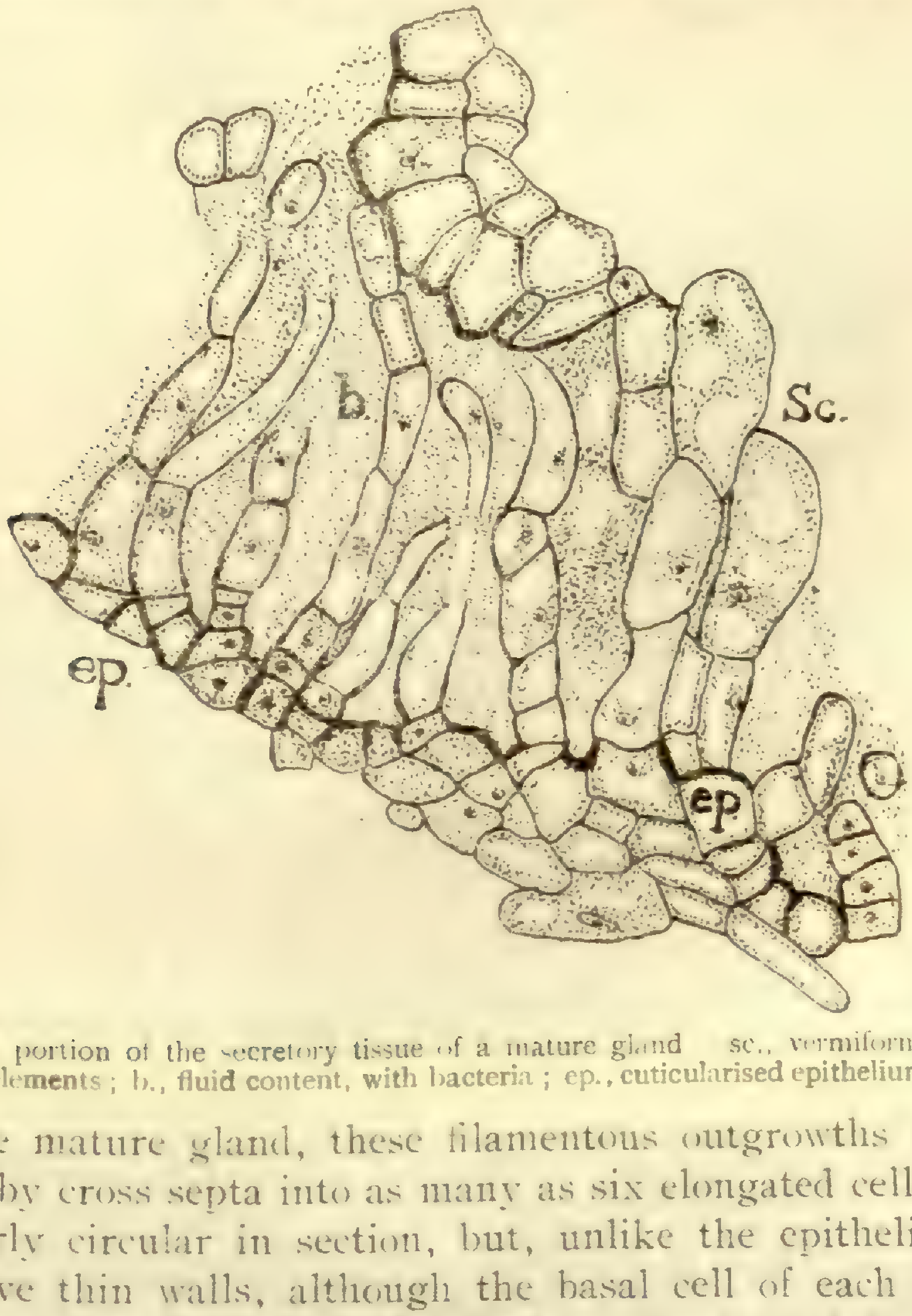

FIG. 1. A portion of the secretory tissue of a mature gland sc., vermiform secretory elements; b., fluid content, with bacteria; ep., cuticularised epithelium. x 250.

In the mature gland, these filamentous outgrowths are subdivided by cross septa into as many as six elongated cells, which are nearly circular in section, but, unlike the epithelial cells, they have thin walls, although the basal cell of each filament may show a certain amount of cuticularisation in its lateral walls. The nuclei of these cells are particularly prominent, and usually there are one or more large vacuoles in the cytoplasm. An enlargement of some of these features of the glandular tissue will be found in fig. 1.

The mode of origin of these cell-filaments will be touched upon when dealing with the development of the gland, after the remaining features of the mature acumen have been disposed of.

In the parenchyma, immediately adjoining the glandular tissue on its upper side, there are numerous air-channels, which follow the convolutions of the gland in a longitudinal direction, thus forming a complex aeration system. Each of these channels is enclosed by a definite sheath of parenchymatous cells.

Likewise intimately associated with the glands are the vascular bundles, which lie parallel to them, and, at frequent intervals, send out smaller, lateral veins, which encircle the lower rim of each gland, being separated from the actual glandular tissue only by the parenchyma sheath. In these small vascular strands, there is no apparent inequality in the amount of xylem and phloem developed to meet the requirements of the gland.

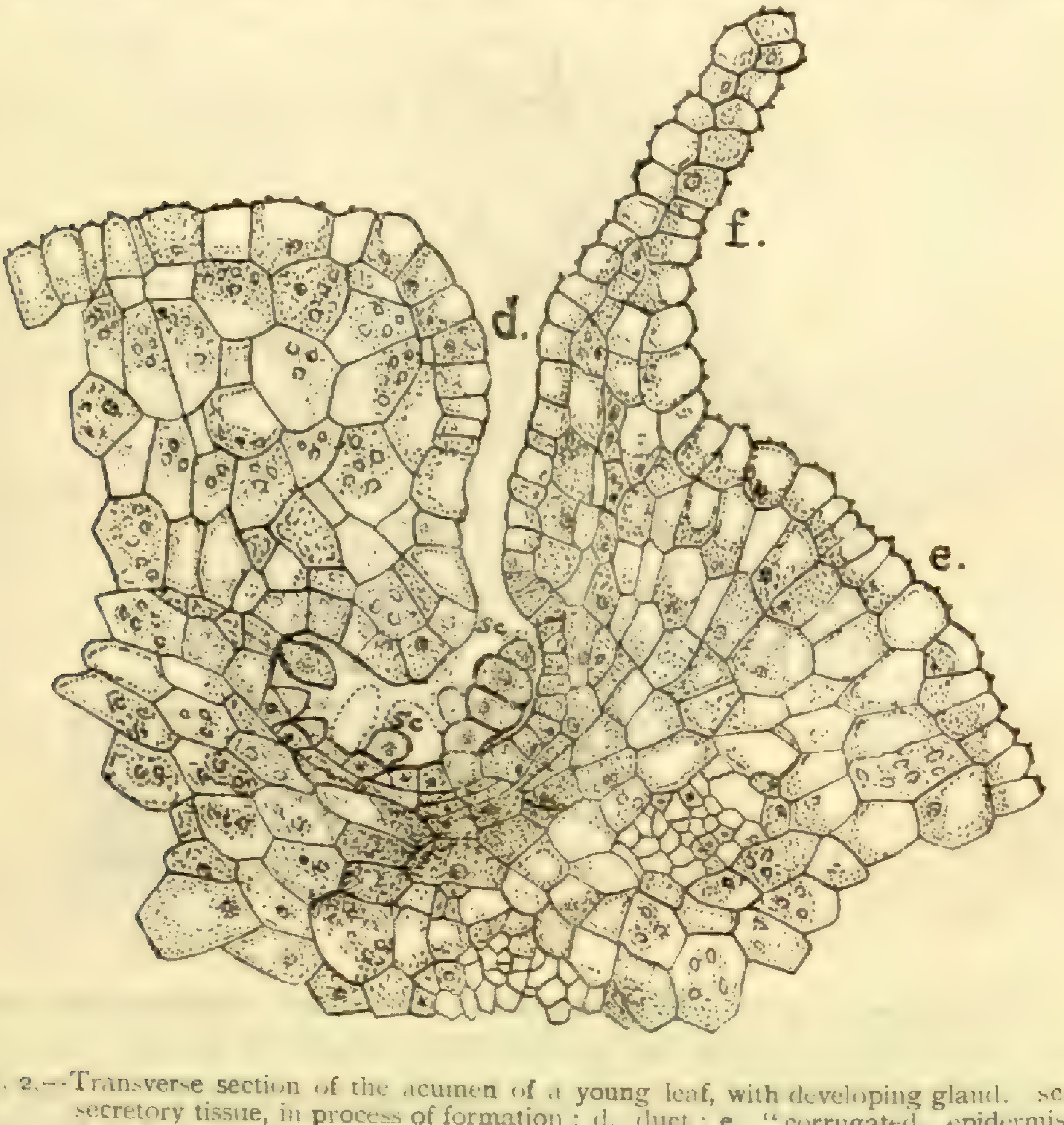

FIG. 2.—Transverse section of the acumen of a young leaf, with developing gland. sc., secretory tissue, in process of formation; d., duct; e., "corrugated" epidermis; f., "flange" of tissue. x 350.

Here and there in the surrounding tissue, are to be seen large oval cells, each containing a bundle of raphides, invested with a mucilaginous envelope. Other cells containing tannin occur in the mesophyll, just below the glands, and are particularly conspicuous in material fixed in chromic acid. Stomata are singularly infrequent in the epidermis of the acumen, and, when present, are confined, more or less, to the margins.

To investigate the origin of the glands, it was found necessary to select very young leaves from the region just behind the growing-point of the shoot, for the initial stages of development are passed through almost before the young leaf unfolds. The comparatively advanced stage represented by fig. 2 was obtained by cutting sections of an acumen, less than 4 mm. in length, and only .7 mm. broad.

The first indication of the glands is the appearance, in the upper epidermis, of a simple invagination, interposed between the two flanges which, at this stage, are very minute and close together. The cells which form the walls of this pit resemble those of the epidermis, except that the corrugations, so obvious on the outer surface of the latter tissue, are absent entirely from the superficial layer of the gland.

In the youngest leaves, the opposing walls of the invagination are in close approximation to one another, but, as the acumen increases in size, the slit widens, and the epithelial cells at the base of the pit increase by radial divisions to form a flattened, flask-shaped cavity. The cells forming the floor of the cavity are rich in protoplasmic contents, and become the initials of the vermiform, secretory elements. Each initial cell, by growth in a radial direction, increases in size until it protrudes into the lumen, when division of the protoplast takes place. The projecting portion of the cell is then cut off by a periclinal wall, and becomes the first cell of the filament. This process is repeated in a series of intercalary cell-divisions until each filament attains to its full dimensions.

A certain amount of fluid is present in the developing gland, even at this stage, and, in fact, it appears almost at its inception, for the growing apex of the stem, and the leaf primordia, are bathed in it, a condition which has a particular significance, since this fluid also harbours the bacterium found in the fully-developed gland. (Plate CXCVIII., fig. 1.)

About this time, nearer the base of the rapidly enlarging acumen, there are indications of the formation of additional gland-cavities by a process of subdivision; the new "pockets" being formed directly from the pre-existing ones, not by invagination, but by an inverse process. This is brought about by active growth in the band of tissue immediately underlying the long axis of each concavity, resulting in the elevation of the central portion of the floor to the level of the epidermis, and thus forming a ridge of tissue, several cells across, which bisects the original pocket longitudinally, and divides the now greatly distended duct into two. With the growth of the acumen, these "twin" glands diverge, and the process is repeated until all the glands found in the fully-developed organ have come into existence. At a later period of development, the epithelium forming the roof of the gland becomes extensively folded, owing to the excessive multiplication of the cells composing it, which has the effect of increasing the internal area of the gland-cavity, while, externally, the hollows between the folds are filled in by the unequal growth of the adjoining ground tissue.

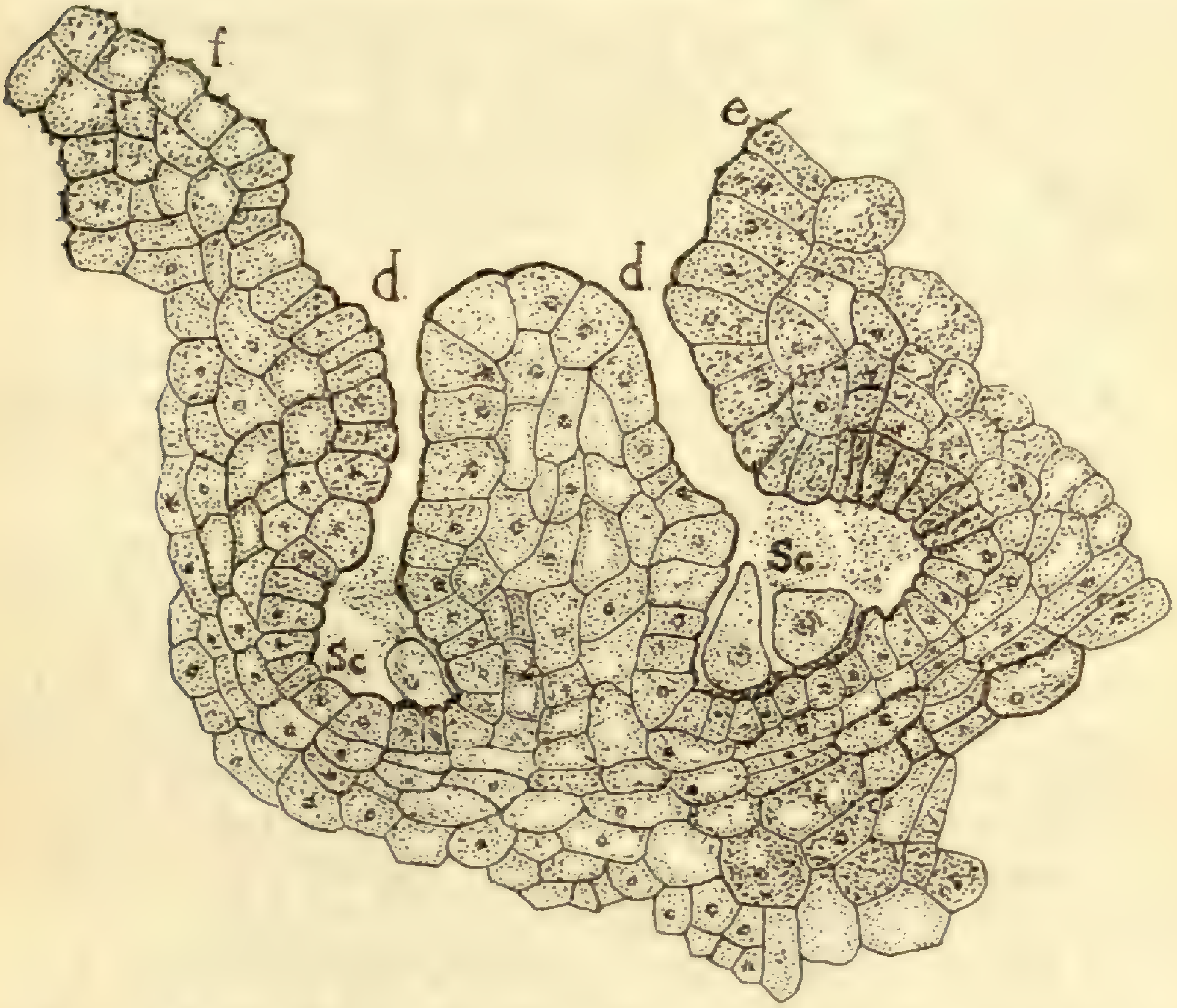

FIG. 3.—Transverse section of a portion of the glandular region at the base of a developing acumen, showing two immature glands, which have been formed by the subdivision of the original gland cavity. sc., secretory tissue; d.d., ducts; e., epidermis; f., base of "flange." x 350.

Meanwhile, other cells of the peripheral layer encircling the lower half of the gland undergo tangential division to form the compact, parenchyma sheath, which, together with the epithelial layer, separates the lumen of the gland, on its under side, from the associated vascular tissues, and the adjacent less-compacted mesophyll.

The very young leaf, and its acumen, are covered with minute, multicellular scales, which are most obvious in sections of the bud, where they appear immersed in the deeply-staining fluid. They are notably evanescent, and are wanting in the fully-developed leaf. These epidermal outgrowths bear a striking resemblance to the immature secretory elements, which are, themselves, the products of a tissue that is epidermal in origin, the chief point of difference between the two being, that while the former are temporary structures, the latter become permanent constituents of the glandular tissue of the acumen. It is not unreasonable to assume, therefore, that the secretory filaments of the gland are merely persistent epidermal scales, which have been retained, and modified, for a definite physiological purpose.

Attempts to determine the chemical composition of the fluid content of the gland cavity were rendered difficult by the presence of the micro-organism, and to its influence, no doubt, may be attributed some of the unexpected results obtained.

At no time was there any visible exudation of fluid from the external orifice of the duct, and chemical tests had therefore to be applied directly to sections of the acumen, by immersing them in a small quantity of the reagent, on a slide, or in a test tube. In this way, a study of the biochemistry of the secretory organs, and associated tissues, was accomplished, the results obtained being briefly collated below.

Fairly thick sections were treated with Fehling's solution, alone, and with the addition of an acid, and were then heated, the process being conducted on a slide in the manner recommended by Schimper, but with purely negative results. Barfoed's solution likewise produced no visible reaction in the tissue of the gland, or its secretion. This failure to detect the presence of sugar, in some form or other, was unexpected, although Correns remarks that he was unable to find either sugar or starch in the developing extra-nuptial nectaries of those species of *Dioscorea*, that he investigated. In the present case, starch was located in the cells of the mesophyll, but it was entirely absent from the glands which were coloured a bright reddish-brown by iodine, suggesting the presence of proteids.

The application of the standard tests for the recognition of proteids produced somewhat surprising results. When sections were placed in a drop of Millon's reagent on a slide, and heated, a dense brick-red precipitate appeared within the glands. Treated in the same way with hot nitric acid and ammonia, the glands responded at once to the xanthoproteic reaction. They were coloured red by the so-called Raspail's reagent, and were turned to a violet colour by the more delicate biuret reaction.

The glands were the only parts of the acumen affected by these reagents, and, while it is recognised that the successful application of any one of these tests does not in itself afford conclusive proof of the presence of proteids, yet, taken together, the combined results are undoubtedly indicative of the gland content being of an albuminoid nature.

In this particular, the glands of *Dioscorea macroura* resemble the "proteid-containing glands" of *Ardisia*, first described by Hohnel.* These glands are likewise the home of a micro-organism, whose relationship to the plant, particularly in the case of *Ardisia crispa*, has been subjected to a critical investigation by Miehe.† Other analogies exist, as exemplified by the parallel features of the glands in certain Rubiaceae, described by Zimmerman ‡ and Boas. This aspect of the glands will be discussed at a later stage.

Standard tests for the detection of tannins were applied to thick sections of the acumen, but no trace of any such astringents could be found within the glands, which is in accordance with the findings of Correns, who failed to discover any tannins in the extra-nuptial nectaries. On the other hand, certain large elements of the ground tissue gave characteristic tannin reactions with iron salts, potassium bichromate, ammonium molybdate, cupric acetate and osmic acid. With Schultze's solution, the whole of the glandular tissue was coloured dark-yellow, and the cuticularisation of the epithelial cell-walls became apparent, but neither with this reagent, nor with iodine and sulphuric acid, could a definite cellulose reaction be obtained in the thin cell walls of the secretory trichomes. No trace of oil could be found in any part of the acumen.

The pronounced proteid character of the gland content, as disclosed by these microchemical tests, was further emphasised by a comparison of the nitrogen content of the acumen with that of the lamina. This was ascertained by the Kjeldahl method of analysis, applied to leaves taken from the living plant at intervals during the day. In every case, the tissue of the acumen was found to contain a much higher percentage of nitrogen than the tissues of the lamina. The following table, in which the results of two of these nitrogen estimations are compared, will serve to illustrate this point.

Nitrogen Content in 100 grams of Leaf Tissue.

Time.	Lamina.	Acumen.	Excess of N_2 Content in Acumen.
10.50 a.m.	246 mgs.	560 mgs.	314 mgs.
4.30 p.m.	173 mgs.	486 mgs.	313 mgs.

The remarkable difference between the nitrogen content of the acumen and that of the lamina, as shown by this process, could only be accounted for by the existence within the former, and conversely by its absence from the latter, of some factor capable of bringing about this increase in the amount of combined nitrogen in the tissues of the acumen. Bearing in mind the proved proteid character of the glands, an explanation for the increase was sought for in the activities of the bacterium associated with them.

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* F. X. R. von Hohnel in Sitz. Ber. Wiener Akad., lxxxiv., abt. 1 (1882), pp. 574, 583.

† H. Miehe in Ber. d. deutsch. Bot. Gesell. xxix. (1911), p. 156 and in Jahrb. für wiss. Bot. liii. (1914), p. 1, and lviii. (1917), p. 29.

‡ A. Zimmerman in Jahrb. für wiss. Bot. xxxvii. (1902), p. 1.

A necessary preliminary to a study of the organism and its vital processes was its isolation from the plant, and this was accomplished by adopting, with some modifications, the methods employed by Harrison and Barlow,* and others, to isolate the bacterium from root-nodules. The acumen of a living leaf was first sterilised by dipping it into a fluid containing small proportions of hydrochloric acid and mercuric chloride. After washing with distilled water, it was cut across with a sterilised scalpel, and by means of a platinum loop, a small quantity of the gland content, with the included bacteria, was then transferred from the cut surface to a test tube containing a liquid culture medium. From this, other tubes were inoculated, and pure cultures of the bacterium were obtained. The usual precautionary measures, to guard against contamination, were taken at each step in the process, and controls were set up for all subsequent cultures, and these remained perfectly sterile.

Various culture media, both liquid and solid, were used for the cultivation of the bacterium, but it was found that liquid media gave the best results in the first transference from living leaf to artificial conditions. The following culture fluid, which has been used in the investigation of root-nodule bacteria, proved very successful in the initial stages of isolation.

saccharose,	1.0 grm.
acid potassium phosphate,	0.5 grm.
magnesium sulphate,	0.02 grm.
distilled water,	100 cc.

Substitution of other sugars for saccharose did not produce the same amount of growth, and glucose was particularly unsatisfactory, but excellent results were obtained by using a sterilised decoction of the leaf tissue. Only neutral, or slightly alkaline solutions, were employed throughout the experiments.

After incubation for a period of 36 hours, at a temperature of 25° C, the inoculated fluids become distinctly turbid, and at the end of 3 days, the cloudiness took the form of a dirty-white growth of a somewhat ropy nature, which collected at the bottom of the tube. Microscopic examination of an air-dried drop of this milky liquid, after staining with carbol-fuchsin, or gentian-violet (Gram's method), showed that it consisted of a pure culture of rod-shaped organisms, from 1.6μ to 2.4μ in length, and from .6μ to .8μ in breadth. They proved to be Gram positive, and it is interesting to note further, that the gentian-violet stain remained in the organism, after dehydration with amyl alcohol, but not after ethyl alcohol, resembling in this particular the similar reaction obtained by Harrison and Barlow on *Pseudomonas radicicola*. About 24 hours after inoculation, the organisms were actively motile in liquid media, and by careful staining, using the van Ermengen method* in a slightly modified form, it was possible to determine the presence of a single polar flagellum on the bacterium cell.

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* Harrison and Barlow in Proc. Roy. Soc. Canada, 1906.

Stab, smear and plate cultures were also made on agar and gelatin, by inoculation from liquid media. The agar was prepared by adding 2 per cent. of the substance to the nutrient solution containing saccharose; in the case of gelatin, the percentage was a little higher. The agar cultures were incubated at 25° C, but those on gelatin, were, of necessity, developed at a lower temperature. It was found, however, that within certain limits, the difference in temperature did not appear to have much influence on the rate of growth.

On saccharose agar, the colonies were round or oval, from 3 5 mm. across. Raised above the substratum, they were hemispherical in form, sabaceous, faintly reticulated, and had a slightly fimbriated margin. On nutrient gelatin, the colonies were ochraceous, but otherwise they resembled those produced on agar. Smear cultures, on the other hand, rapidly became agglomerated to form nodulose masses (Plate CXCVIII., fig. 2). In stab cultures, the growth was strongest at the point of entrance, and relatively weak internally, along the edges of the stab.

On agar and gelatin, the colonies made their appearance in from 2 4 days after inoculation, the time taken varying with the composition of the medium used as a source of infection. For example, cultures on nutrient gelatin, initiated by inoculation from solid media, became apparent in 24 hours, while, under the same conditions, cultures made from liquid media required from 4 5 days to reach a similar state of development.

The culture of the organism, under artificial conditions, was maintained over a period of three months, at a mean temperature of 15° C, and during that time, cross infections between different media were carried out, the cultures, in all cases, remaining pure.

That the organism is aerobic was suspected from its behaviour in stab cultures, and this was confirmed by the impossibility of inducing it to grow in a Buchner's tube, over strong pyrogallic acid in caustic potash. Liquefaction of gelatin was brought about after a comparatively long period of growth, ranging from 18 to 28 days, the liquefied gelatin subsequently becoming cloudy. Sterilised milk, to which a culture of the bacterium had been added, ultimately became clear and translucent, and gave a slightly acid reaction with litmus. The transference of a drop of this fluid to nutrient gelatin resulted again in the production of a pure culture of the organism.

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* See Centr. für Bakt. xv. (1894), p. 969.

In suitably stained sections of the glands of *Dioscorea macroura*, relatively large, irregularly shaped bodies, resembling the bacteroids of leguminous nodules, had been observed, and these also appeared in the cultures on artificial media. Similar involution forms were found by Faber* in the bacterial leaf-glands of *Pavetta* and *Psychotria*. This author carried out an extended research on the physiological attributes of the organism inhabiting these "bakterienknoten," and, as a result of his experiments, he came to the conclusion that the "mycobacterium," isolated from the glands, possessed the power of utilising free nitrogen, and that the inter-relationship of plant and micro-organism was therefore of the nature of a "bakteriensymbiose."

A similar view of the intimate relationship existing between *Ardisia crispa* and its associated bacterium was expressed by Miehe, after a lengthy series of observations on the biology of the micro-organism and its effect on the growth of the plant.

In the light of these researches, and having regard to the several points of resemblance between the glands of *Dioscorea macroura* and those of other tropical plants investigated by Faber and Miehe, it was essential that the *Dioscorea* organism should be subjected to similar tests, in order to determine whether, or not, it was endowed with like properties, and capable of bringing free nitrogen into combination. Kjeldahl determinations of the nitrogen content of cultures of the bacterium, isolated from the glands, were therefore compared with similar estimations of the amount of nitrogen present in the culture medium in sterile controls. In every case, there was evidence of an appreciable gain in the nitrogen content, presumably due to the activities of the organism.

The percentage increase in nitrogen varied according to the nature and composition of the medium employed, and seemed to be inversely proportional to the amount of combined nitrogen present in the nutrient medium at the time of inoculation, e.g., a nutrient medium with a low initial nitrogen content, three weeks after inoculation, showed a percentage increase in nitrogen of just over 100, while a medium of a different composition, and a higher initial nitrogen content, showed a gain of only 67 per cent., although, in the latter experiment, the culture had been maintained over a much longer period of time.

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* F. C. von Faber in Jahrb. für wiss. Bot. li. (1912), p. 283, and liv. (1914), p. 243.

The power of nitrogen fixation possessed by the *Dioscorea* organism was tested up to fully 80 days after inoculation, but its effect on the nitrogen content of artificial media is typified by the following result, obtained by the Kjeldahl analysis of a 23 days culture growth.

Nitrogen Content in 100 grams of Culture Medium.	
In the control,	23.18 mg.
In the culture medium at conclusion of experiment,	48.61 mg.
Gain,	25.43 mg.

The increase in the nitrogen content may appear small when contrasted with the results obtained from similar experiments carried out with nitrogen bacteria from root-tubercles. It compares not unfavourably, however, with some of Faber's estimations of the nitrogen increase in culture solutions, brought about by the organism isolated from *Pavetta Zimmermanniana.* He found that, with a nitrogen content of 12.256 mg. in the control, the gain in three separate experiments was, respectively, 9.694 mg., 19.592 mg. and 12.750 mg. of nitrogen per 200 cc. of culture solution. The duration of each experiment was 20 days. Using an almost nitrogen-free culture solution, Faber found that the increase in nitrogen, for the same length of time, was much greater than the amounts quoted above, while with a higher percentage of nitrogen in the control, the increase was correspondingly less.

That the bacterium found in the glands of *Dioscorea macroura* stands in the same relationship to the plant, as do those organisms, described by Faber and Miehe, to the plants with which they are allied, is an interesting hypothesis, which gains support from the behaviour of the isolated bacterium in culture media. But whatever powers of nitrogen-fixation may be possessed by the organism, when divorced from the plant, it is quite another matter to state categorically, that, within the plant, the bacterium plays the rôle of nitrogen provider, in the same way as do the bacteria in root-nodules, although the high nitrogen content of the acumen does seem to postulate a certain activity.

It may be merely a case of contingent symbiosis, or a fortuitous association, such as that mentioned by Koorders* in his description of the "wasserkelche" of tropical plants.

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* S. H. Koorders in Ann. Jard. Bot. Buitenzorg, xiv. (1897), p. 451.

On the other hand, this association of a bacterium with *Dioscorea macroura* has every appearance of being of the nature of a more permanent alliance, for, as it has been pointed out already, the organism is present in the secretion enveloping the bud which originates from the tuber, by which avenue it is apparently able to reach the developing glands of the new plant.

All attempts to grow the plant from a sterilised tuber, under perfectly sterile conditions, have so far proved abortive, and it is therefore impossible to say what effect the disassociation of bacterium and plant would have upon the growth of the latter.

Although dissimilar in structure and mode of origin to those of *Ardisia, Pavetta* and *Psychotria*, the leaf-glands of *Dioscorea macroura* undoubtedly possess some of their peculiar physiological properties. They have been shown to differ in many ways from the extra-nuptial nectaries of other species of *Dioscorea,* and in one particular—their bacterial nature—they are possibly unique within the genus.

In conclusion, the writer desires to record his indebtedness to Dr J. M. Dalziel, for much helpful information regarding the plant in its native habitat, and to Mr I. H. Burkill, Director of the Botanic Gardens, Singapore, for his invaluable assistance in the matter of identification. An expression of thanks is also due to Mr R. M. Adam, for the photograph of the culture, reproduced on Plate CXCVIII., and to Mr J. J. Campbell, for the care expended on the cultivation of the plants, which furnished the material for this investigation.

SUMMARY.

1. The leaf-glands of *Dioscorea macroura* form a series of elongated "pockets" in the mesophyll of the prominent acumen.

2. The "pockets" are formed by a process of invagination followed by subdivision, and when mature communicate with the upper epidermis by way of narrow slits or ducts.

3. Each glandular "pocket" is lined, in part, with a secretory tissue composed of vermiform, multicellular trichomes, and is filled with a mucilaginous fluid which gives a strong proteid reaction.

4. The fluid content of the gland cavity is the home of a bacterium which is always present in great numbers in the glands of the living leaf.

5. The bacterium, when isolated in pure cultures on artificial media, is found to possess the power of nitrogen-fixation to an appreciable degree.

6. The nitrogen-content of the glandular acumen is greatly in excess of that of the leaf-lamina, postulating a similar process of nitrogen-fixation taking place within the glands

7. The presence of nitrogen-fixing bacteria in the glands of *Dioscorea macroura* would appear to constitute a parallel case to that of such a species as *Psychotria bacteriophila,* in which the foliicolous micro-organism is a source of nitrogen supply to the plant.

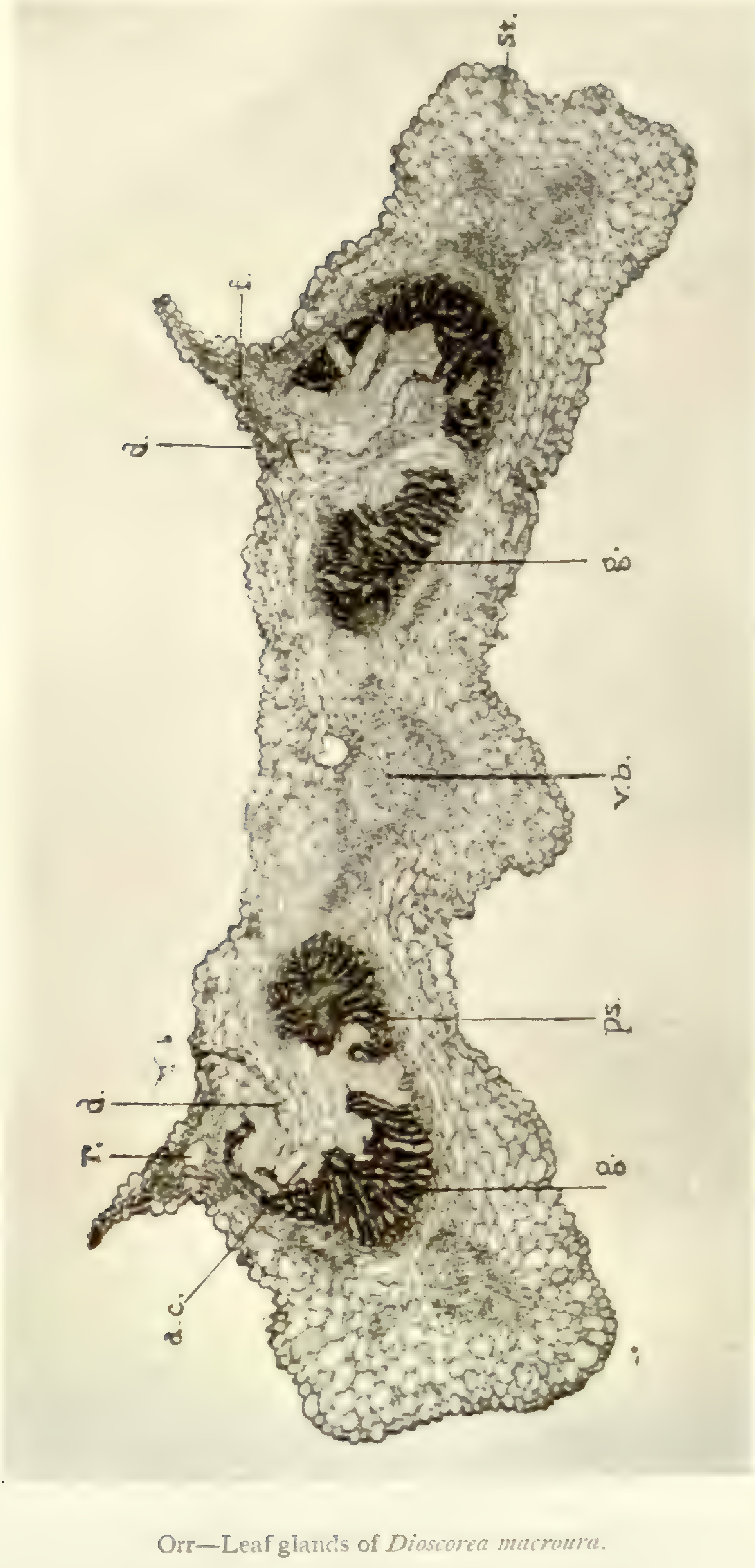
EXPLANATION OF PLATES CXCVII-CXCVIII.

Illustrating Mr M. Y. Orr's paper on Dioscorea macroura.

PLATE CXCVII. Leaf-acumen of *Dioscorea macroura*, in transverse section. g.g., glands, with vermiform secretory elements and darkly-stained fluid content; d.d., ducts, leading to the upper surface; p.s., parenchyma sheath, encircling the gland; a.c., air channel; r., raphides; v.b., vascular bundle; s.t., stoma; f., "flange" of tissue.

PLATE CXCVIII. Fig. 1.—Apical region of a shoot of *Dioscorea macroura*, in longitudinal section.
a., apical meristem; s., mucilage, containing bacteria; t., epidermal scale; r., raphides.

Fig. 2.—Gelatin culture of the bacterium isolated from the glands of *Dioscorea macroura*, at the point of liquefaction.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Orr—Leaf glands of *Dioscorea macroura.*

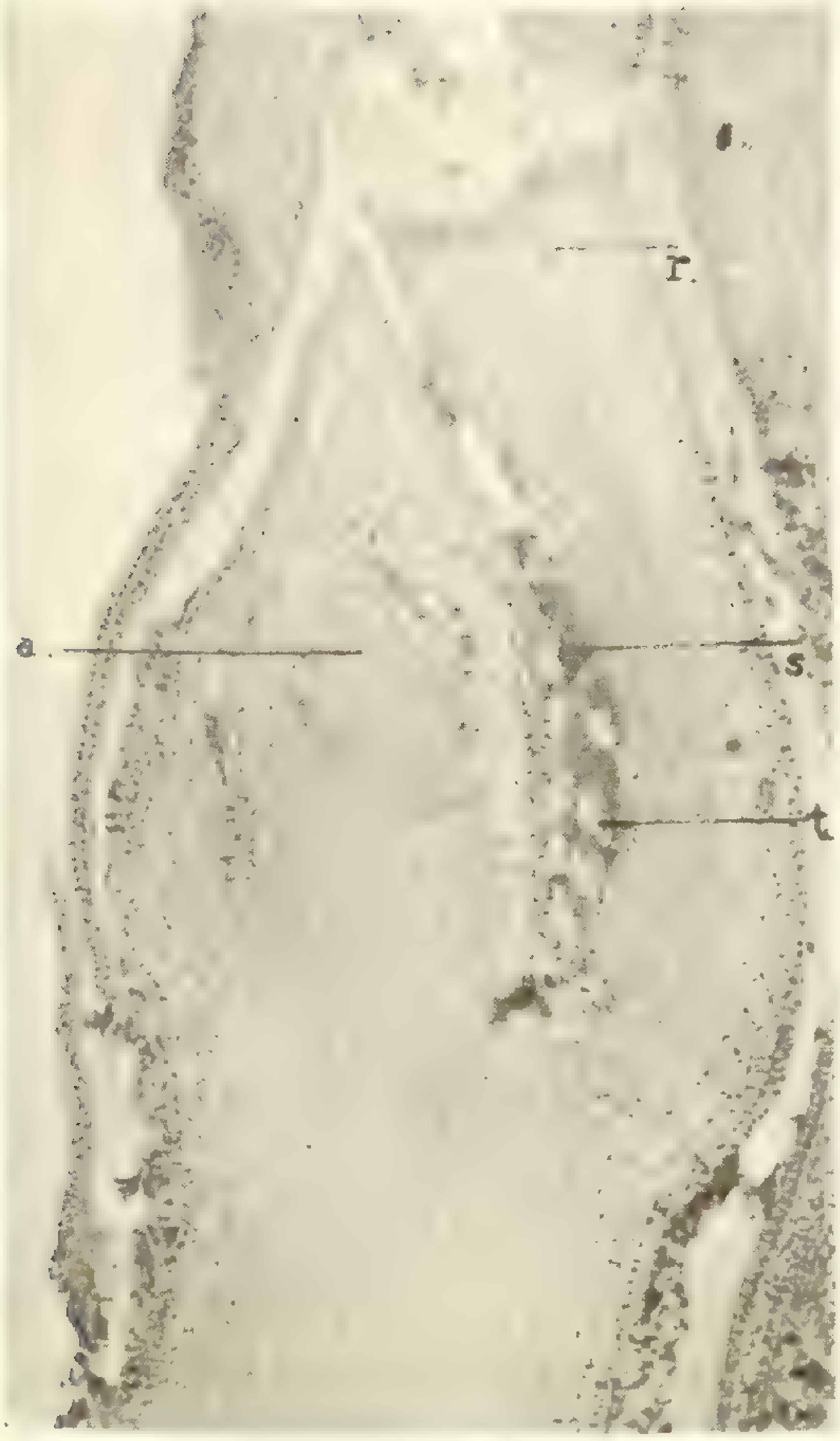

FIG. 1.

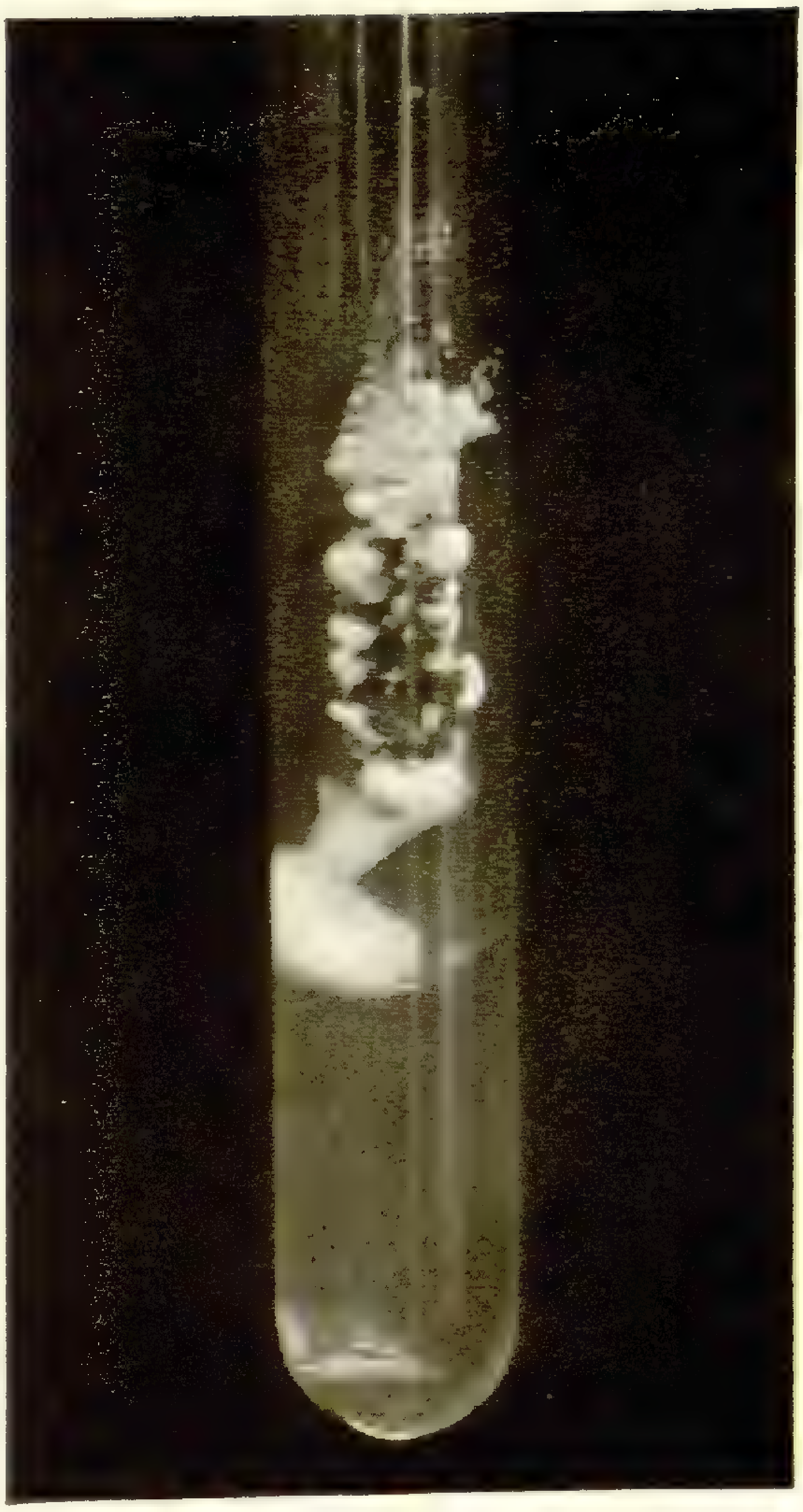

FIG. 2.

Orr—Leaf glands of *Dioscorea macroura*.

A New Species of Desmogyne.

BY

MARY M. B. KNAGG, B.Sc.

Desmogyne angustifolia, Knagg.

Species affinis *D. neriifoliae,* King et Prain, a qua foliis lineari-lanceolatis longe acuminatis et calyce lobato haud truncato facile distinguitur.

Frutex epiphyticus glaberrimus, ramis dependentibus gracilibus. Folia alterna; lamina 6–13 cm. longa 0.25–1.25 cm. lata, coriacea, lineari-lanceolata, apice longe attenuata, basi in petiolum gradatim angustata, margine integra valde revoluta, costa subtus prominente supra impressa; petiolus 0.25–1 cm. longus. Inflorescentia corymbosa floribus 2–8; pedunculi 2–6 cm. longi; pedicelli 1.5–2.5 cm. longi sursum incrassati apice in cupulam 6–8 mm. altam expansi; bracteae triangulares acutae 1 mm. longae. Calyx 3–4 mm. longus, 4 mm. latus, tubulosus, 5 lobatus, lobis circ. 1 mm. longis acutis anguste triangularibus apice valde attenuatis basi circ. 1 mm. latis. Corolla 2–2.5 cm. longa, 3 mm. lata, tubulosa, recta 5-lobata, lobis brevibus anguste triangularibus circ. 2 mm. longis. Stamina 10, epigyna, libera, filamentis brevissimis circ. 1 mm. longis, antherarum elongatarum erectarum apicibus ad corollae os attingentibus. Ovarium 5–loculare, stylo filiformi apice indistincte 5-lobulato, ovulis numerosis. Fructus deest.

"Burma:—Headwaters of the Irrawaddy, Nam Yin. Alt. 2,000 ft. Cup, calyx and lower part of the perianth dull crimson, upper part of perianth pale green with red reticulations. The flowers apparently do not open. The anthers are at the bottom of the tube on a very short filament, and long appendages reaching to the apex of the tube. Epiphytic, hanging in long festoons from trees lining the river. At the base of the stem is a large woody swollen water-reservoir, from the other side of which grow the long roots." Coll. F. Kingdon Ward. No. 5566. 3-12-22.

This species differs from *D. neriifolia,* King et Prain, in having narrower strongly revolute leaves and in the distinctly lobed, not truncate, calyx. Moreover, the flowers are smaller

[Notes, R.B.G. Edin., No. LXVIII, November 1923.]

than those of *D. neriifolia* and the pedicel cup is more pronounced, having the pedicel itself less thickened below the cup.

There are now in the Herbarium, Royal Botanic Garden, Edinburgh, two imperfect specimens of *Desmogyne*. One of these is a fruiting specimen from the herbarium of J. H. Lace, collected by Capt. B. N. Abbay on the N.E. frontier, Burma, in 1913; while the other, which has a few detached and imperfect flowers, was collected in the Nam Tisang-Mali divide, Burma, by F. Kingdon Ward in 1922. These specimens agree with the species *D. angustifolia* in having a lobed calyx but differ from it in having a narrower pedicel cup and broader foliage. Owing to the small amount of material available and its poor condition it is, however, impossible to name these specimens at present.

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MISSOURI BOTANICAL GARDEN
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Plantae Chinenses Forrestianae.

CATALOGUE of the PLANTS (excluding Rhododendron) collected by GEORGE FORREST during his fifth exploration of YUNNAN and EASTERN TIBET in the Years 1921-1922.

PREPARED BY

THE STAFF OF THE ROYAL BOTANIC GARDEN,

EDINBURGH.

[Notes R.B.G. Edin., No., LXIX-LXX., November 1924.]

PREFACE.

THE area explored by Mr George Forrest during his 1921–22 expedition included certain parts of N.W. Yunnan, S.E. Tibet and S.W. Szechuan. His collection for those two years consists of 3924 numbers of which a large proportion is represented by the genus Rhododendron. The present catalogue is an enumeration of the plants collected excluding Rhododendron. The materials of the latter genus have not yet been fully worked out and will require considerable time for their elucidation.

The majority of the specimens were collected within the confines of Yunnan; the remainder in those regions of Szechuan and Tibet which border on N.W. Yunnan. The areas lie between lat. 24° 35′ N. and 28° 48′ N. and between long. 97° 35′ E. and 101° 6′ E.

This fifth expedition supplements the work carried through on previous journeys, and extends the area botanically explored further west and north. On the west Mr Forrest went beyond the Salwin-Kiu Chiang divide, while on the north he extended his survey along the same divide, as well as along the Mekong-Salwin divide. Considerable collections were made in the Salwin valley up to lat. 28° 48′ N.

The Royal Botanic Garden, Edinburgh, owes the possession of this valuable collection to the generosity of Mr J. C. Williams, Caerhays Castle, Cornwall, and of Mr Reginald Cory, Duffryn Castle, Cardiff, for whom Mr Forrest undertook these two years of botanical exploration.

Catalogue.

The numbers are Mr Forrest's field numbers as attached to his dried specimens, and the descriptions are copied from his field labels.

19334. **Sterculia principis,** Gagnep. Tree of 70–90 ft. Flowers creamy yellow, fragrant. Burmese frontier below Tengyueh. Lat. 25° N. Alt. 3–4,000 ft.

19337. **Rhodoleia Championi,** Hook. f. Tree of 40–50 ft. Flowers deep rose-crimson. Open mixed forests on the eastern flank of the N'Maikha-Salwin divide. Lat. 25° 50′ N. Long. 98° 40′ E. Alt. 9,000 ft. March 1921. N.W. Yunnan.

19340. **Ostodes Katharinae,** Pax, vel aff. Shrub or tree of 20–40 ft. Flowers creamy-white. In open forests on the eastern flank of the N'Maikha-Salwin divide. Lat. 25° 50′ N. Long. 98° 40′ E. Alt. 8,000 ft. March 1921. N.W. Yunnan.

19341. **Lacaitea (Trichodesma) calycosa** (Coll. et Hemsl.), Brand. Half shrubby plant of 3–4 ft. Flowers pale greenish-yellow. Open, dry situations on the margins of scrub in the Salwin valley. Lat. 25° 10′ N. Long. 98° 50′ E. Alt. 6–7,000 ft. April 1921. N. W. Yunnan.

19342. **Cyrtolepis Buchanani,** Roem. et Sch. Semi-scandent trailing shrub of 10–15 ft. Flowers green, fragrant. On scrub and in thickets in the Salwin valley. Lat. 25° 10′ N. Long. 99° E. Alt. 7,000 ft. April 1921. N.W. Yunnan.

19343. **Caragana Chamlagu,** Lam. Spinous shrub of 2–4 ft. Dry situations in thickets on the hills east of Tengyueh. Flowers pale yellow, shaded purplish-brown. Lat. 25° N. Long. 98° 30′ E. Alt. 6–7,000 ft. April 1921. N.W. Yunnan.

19345. **Acer amplum,** Rehd. var. Tree of 40 50 ft. Foliage only. Mixed forests on the Shweli-Salwin divide. Lat. 25° 10′ N. Long. 98° 45′ E. Alt. 10–11,000 ft. April 1921. N.W. Yunnan.

19346. **Primula sino-mollis,** Balf. f. Plant of 6–10 inches. Flowers pale rose-purple, eye yellow. Shady thickets in the Salwin valley. Lat. 25° 10′ N. Long. 98° 50′ E. Alt. 7,000 ft. April 1921. N.W. Yunnan.

19347. **Elaeocarpus Braceanus,** Watt. Tree of 40–50 ft. Flowers dull creamy-yellow. In mixed forests in ravines on the eastern flank of the N'Maikha-Salwin divide. Lat. 25° 50′ N. Long. 98° 25′ E. Alt. 8–9,000 ft. March 1921. N.W. Yunnan.

19348. **Phyllanthus Emblica,** Linn. Shrub of 2 3 feet. Flowers pale yellow. Dry, rocky, grassy slopes in the Salwin valley. Lat. 25° 10′ N. Long. 98° 50′ E. Alt. 6–7,000 ft. April 1921. N.W. Yunnan.

19349. **Indigofera stachyodes,** Lindl. var. Shrub of 4–6 ft. Flowers greyish-rose. Open stony slopes amongst scrub in the Salwin valley. Lat. 25° 10′ N. Long. 98° 50′ E. Alt. 6–7,000 ft. April 1921. N.W. Yunnan.

19350. **Viola serpens,** Wall. Semi-prostrate plant of 3 9 ins. Flowers white, stained purple at base. Shady moist pasture amongst willow scrub on the Tengyueh-Shweli divide. Lat. 25° 5′ N. Long. 98° 30′ E. Alt. 8,000 ft. April 1921. N.W. Yunnan.

19351. **Viburnum congestum,** Rehder. Shrub of 4–8 feet. Flowers fragrant, waxy-white flushed pale rose-purple on exterior. Open scrub on marshy uplands on the Shweli-Salwin divide. Lat. 25° 10′ N. Long. 98° 45′ E. Alt. 10,000 ft. April 1921. N.W. Yunnan.

19353. **Dichroa febrifuga,** Lour. Shrub of 4 7 feet. Flowers immature, green (!). Margins of shady pine and mixed forests on the Shweli-Salwin divide. Lat. 25° 10′ N. Long. 98° 45′ E. Alt. 8–9,000 ft. April 1921. N.W. Yunnan.

19354. **Olea dioica,** Roxb. Spinous-leaved shrub of 15–20 ft. Flowers green. Amongst scrub and in thickets on the hills east of Sha-yang. Lat. 25° 20′ N. Long. 99° 40′ E. Alt. 7–8,000 ft. April 1921. N.W. Yunnan.

19355. **Jasminum dispermum,** Wall. Scandent shrub of 8–14 ft. Flowers white, deeply flushed purple-rose on exterior, fragrant. On scrub and in thickets in side valleys on the hills east of Sha-Yang. Lat. 25° 20′ N. Long. 99° 40′ E. Alt. 7–8,000 ft. April 1921. N.W. Yunnan.

19356. **Euonymus cornutoides,** Loesener. Shrub of 12–20 ft. Flowers dull purple. In thickets and mixed forests on the Shweli-Salwin divide. Lat. 25° 10′ N. Long. 98° 45′ E. Alt. 9,000 ft. April 1921. N.W. Yunnan.

19357. **Buddleia heliophila,** W. W. Sm. Shrub of 3–5 ft. Flowers pure pale soft rose-pink, drying purplish, fragrant. Dry scrubby banks on the margins of pine forests on the hills around Beta-pu. Lat. 25° 30′ N. Long. 99° 48′ E. Alt. 8–9,000 ft. April 1921. N. W. Yunnan.

19358. **Ligustrum Coryanum,** W. W. Sm. Shrub of 3–6 ft. Flowers creamy-white, fragrant. Margins of dense scrub and on banks in the Hsia-kuan ho valley, western flank of the Tali range. Lat. 25° 25′ N. Long. 100° 10′ E. Alt. 6,000 ft. April 1921. N.W. Yunnan.

19359. **Machilus robusta,** W. W. Sm. Shrub of 20–25 ft. Flowers deep soft olive-brown. In shady thickets by streams on the Salwin-Pu-piao divide. Lat. 25° 10′ N. Long. 99° E. Alt. 6–7,000 ft. April 1921. N.W. Yunnan.

19360. **Olea dioica,** Roxb. Shrub or tree of 20–40 feet. Flowers green, fragrant. In openings and on the margins of mixed forests on the range between Yung-Chang and the Mekong valley. Lat. 25° 12′ N. Long. 99° 20′ E. Alt. 9–10,000 ft. April 1921. N.W. Yunnan.

19361. **Cryptomeria japonica,** D. Don. Tree of 50–70 ft. In mixed forest on the Salwin-Pu-piao divide. Lat. 25° 10′ N. Long. 99° E. Alt. 8–9,000 ft. April 1921. N.W. Yunnan.

19362. **Hymenodictyon flaccidum,** Wall. Shrub of 20–40 ft. Foliage only, deep purple. In thickets in the Salwin valley. Lat. 25° 10′ N. Long. 98° 50′ E. Alt. 6,000 ft. April 1921. N.W. Yunnan.

19363. **Bryum.** Matted plant of 1 inch. Moist clayey slopes in shady mixed forest on the Shweli-Salwin divide. Lat. 25° 10′ N. Long. 98° 45′ E. Alt. 10,000 ft. April 1921. N.W. Yunnan.

19364. **Quercus.** Shrub or tree of 30–40 ft. In mixed forest on the mountains around Sha-yang. Lat. 25° 20′ N. Long. 99° 40′ E. Alt. 7–8,000 ft. April 1921. N. W. Yunnan.

19365. **Myrica esculenta,** Ham. Shrub of 6–9 ft. In immature fruit. Fruits edible. Native name—Yeh-meh. Dry hillsides amongst scrub on the hills around Chutong. Lat. 25° 24′ N. Long. 99° 40′ E. Alt. 7–8,000 ft. April 1921. N.W. Yunnan.

19366. **Glochidion.** Matted shrub of 12–15 ft. Branches arched. Flowers olive-green (!). Amongst scrub and in thickets on the hills east of Sha-yang. Lat. 25° 20′ N. Long. 99° 40′ E. Alt. 7–8,000 ft. April 1921. N.W. Yunnan.

19367. **Randia** sp. aff. **sinensis,** Roem. et Sch. Spinous, semiscandent shrub of 9 15 ft. Flowers white, fragrant. In thickets and scrub in side valleys on the hills east of Sha-yang. Lat. 25° 20′ N. Long. 99° 40′ E. Alt. 7–8,000 ft. April 1921. N.W. Yunnan.

19368. **Vaccinium scopulorum,** W. W Sm. Shrub of 2–4 ft. Flowers greenish-white. Shady banks in dry pine forest on the hills east of Sha-Yang. Lat. 25° 20′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. April 1921. N.W. Yunnan.

19369. **Prunus majestica,** Koehne. Shrub of 20–40 ft. Flowers (?) probably pink. In fruit. Fruits black-crimson, bitter. Open situations in ravines on the hills east of Sha-yang. Lat. 25° 20′ N. Long. 99° 40′ E. Alt. 7–8,000 ft. April 1921. N.W. Yunnan.

19370. **Prunus majestica,** Koehne. Shrub or tree of 30–45 ft. In fruit, fruits black-crimson, bitter. Flowers precocious, large, deep pink in colour and produced in great abundance. Flower Feb. and March—or even earlier according to season. Tali valley. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 6,700–7,000 ft. April 1921. N.W. Yunnan.

[The Tali Cherry.]

19371. **Millettia** sp. aff. **pachycarpa,** Benth. Shrub of 4–6 ft. Flowers bright rose-pink, standard darkest with dark crimson markings. Open dry hillsides and in ravines on the hills west of Yung-chang. Lat. 25° 10′ N. Long. 99° 12′ E. Alt. 7–8,000 ft. April 1921. N. W. Yunnan.

19372. **Docynia indica,** Decne. Shrub of 20–25 ft. Flowers creamy-white. Amongst scrub and in thickets on the hills east of Sha-yang. Lat. 25° 20′ N. Long. 99° 40′ E. Alt. 9,000 ft. April 1921. N.W. Yunnan.

19373. **Begonia Acetosella,** Craib. Plant of 3–5 ft. Flowers rich pink. Shady moist situations by streams in mixed forests in the Salwin valley. Lat. 25° 10′ N. Long. 98° 50′ E. Alt. 6,000 ft. April 1921. N.W. Yunnan.

19374. **Aucuba chinensis,** Benth. Shrub of 10–15 feet. Flowers creamy-white. Shady situations by streams in the Salwin valley. Lat. 25° 10′ N. Long. 98° 50′ E. Alt. 5–6,000 ft. April 1921. N.W. Yunnan.

19375. **Viburnum cordifolium,** Wall. Shrub of 6–9 feet. Flowers creamy-white. Open thickets in side valleys on the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 10,000 ft. May 1921. N.W. Yunnan.

19376. **Salix cathayana,** Diels. Shrub of 2–4 feet. Open meadows on the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 9,000 ft. May 1921. N.W. Yunnan.

19377. **Pinus sinensis,** Lamb. var. **yunnanensis,** Shaw. Tree of 30–70 ft. Open pine forests on the eastern flank of the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 9–10,000 ft. May 1921. N.W. Yunnan.

19378. **Abies Delavayi,** Franch. Tree from 40–90 ft. Forming open forests on the eastern flank of the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 9–11,000 ft. May 1921. N.W. Yunnan.

19379. **Sabia yunnanensis,** Franch. Shrub of 6–9 ft. Flowers green. Amongst scrub on the margins of meadows on the eastern flank of the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. May 1921. N.W. Yunnan.

19380. **Myrica.** Shrub of 4-6 ft. Flowers olive-yellow. In immature fruit. Open scrub in dry side valleys on the eastern flank of the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 9,000 ft. May 1921. N.W. Yunnan.

19382. **Trillium Tschonoskii,** Maxim. Plant of 10–18 inches. Flowers white. Shady situations by streams in side valleys on the eastern flank of the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 9–10,000 ft. May 1921. N.W. Yunnan.

19386. **Tsuga yunnanensis,** Mast. Shrub or tree of 30–60 ft. In mixed forest in side valleys on the eastern flank of the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. May 1921. N.W. Yunnan.

19387. **Salix cathayana,** Diels. Shrub of 6–9 ft. Open thickets on the eastern flank of the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. May 1921. N.W. Yunnan.

19388. **Abies Faberi,** Craib. Tree of 50–70 ft. In Abies forest on the eastern flank of the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. May 1921. N.W. Yunnan.

19389. **Bulleyia yunnanensis,** Schltr. Epiphytic plant of 18 20 inches. In fruit. On ledges of cliffs in side valleys on the eastern flank of the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 7–8,000 ft. May 1921. N.W. Yunnan.

19390. **Primula sinolisteri,** Balf. f. Plant of 4–8 inches. Flowers pale rose or white. Ledges of cliffs in shady side valleys on the eastern flank of the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 9–10,000 ft. May 1921. N.W. Yunnan.

19391. **Isatis tinctoria,** Linn. Plant of 2–3 ft. In fruit. In and on the margins of wheat fields in the Lang-kong valley. Lat. 26° 12′ N. Long. 100° 10′ E. Alt. 7,000 ft. May 1921. N.W. Yunnan.

19392. **Vitis Thunbergii,** Sieb. et Zucc. var. **adstricta** (Hance), Gagnep. Scandent shrub of 6–12 ft. Flowers olive-green. Amongst scrub on the margins of thickets on the ascent of the Sung-kwei pass from the Lang-kong valley. Lat. 26° 12′ N. Long. 100° 10′ E. Alt. 8,000 ft. May 1921. N.W. Yunnan.

19393. **Berberis levis,** Franch. Spinous shrub of 2–3 ft. Flowers yellow. Open, dry situations amongst scrub on the western flank of the Sung-kwei pass. Lat. 26° 12′ N. Long. 100° 12′ E. Alt. 9,000 ft. May 1921. N.W. Yunnan.

19394. **Leptodermis glauca** (Franch.), Diels. Dwarf matted shrub of 1 ft. Foliage strongly malodorous, flowers white, faintly flushed rose on exterior. Open, dry situations amongst scrub on the western flank of the Sung-kwei pass. Lat. 26° 12′ N. Long. 100° 12′ E. Alt. 9–10,000 ft. May 1921. N.W. Yunnan.

19395. **Artemisia annua,** Linn. Plant of 2–2½ ft. Foliage only, strongly aromatic. Margins of bogs and streams in the Teng-chuan valley. Lat. 26° 4′ N. Long. 100° 6′ E. Alt. 7,000 ft. May 1921. N.W. Yunnan.

19396. **Rosa.** Spinous shrub of 2–4 ft. Very free-flowering. Flowers bright rose. Open situations by streams in the Teng-chuan valley. Lat. 26° 4′ N. Long. 100° 6′ E. Alt. 7,000 ft. May 1921. N.W. Yunnan.

19397. **Pyrus.** Shrub of 20–30 ft. In fruit. Open thickets on the western flank of the Sung-kwei pass. Lat. 26° 12′ N. Long. 100° 12′ E. Alt. 8,000 ft. May 1921. N.W. Yunnan.

[Said to be the wild stock on which most of the cultivated pears of W. and N.W. Yunnan are grafted or budded.]

19398. **Clerodendron fragrans,** Wall. Shrubby plant of 3–6 ft. Flowers white, fragrant. Shady situations on the margins of thickets on the western flank of the Sung-kwei pass. Lat. 26° 12′ N. Long. 100° 12′ E. Alt. 8,000 ft. May 1921. N.W. Yunnan.

19399. **Rosa.** Spinous shrub of 3–5 ft. Very floriferous. Flowers deep rose. Open situations by streams in the Teng-chuan valley. Lat. 26° 4′ N. Long. 100° 6′ E. Alt. 7,000 ft. May 1921. N.W. Yunnan.

19401. **Primula sinolisteri,** Balf. f. Plant of 3–8 inches. Flowers pale lavender-rose with green eye, fragrant. Shady, moist situations in thickets on the western flank of the Sung-kwei pass. Lat. 26° 12′ N. Long. 100° 12′ E. Alt. 9,000 ft. May 1921. N.W. Yunnan.

19402. **Viburnum cordifolium,** Wall. Shapely shrub of 6–10 ft. and as many feet in diameter. Flowers pure white with grey anthers. In open pine forests and on the margins thereof on the western flank of the Sung-kwei pass. Lat. 26° 12′ N. Long. 100° 12′ E. Alt. 8,500 ft. May 1921. N.W. Yunnan.

19403. **Rosa.** Spinous shrub of 9–18 ft. Branches arched. Flowers white, strongly fragrant. Margins of thickets in dry situations on the western flank of the Sung-kwei pass. Lat. 26° 12′ N. Long. 100° 12′ E. Alt. 8,500 ft. May 1921. N.W. Yunnan.

19405. **Rosa.** Spinous shrub of 2–4 ft. Flowers bright rose. Open situations in the Langkong valley. Lat. 26° 12′ N. Long. 100° 10′ E. Alt. 7,000 ft. May 1921. N.W. Yunnan.

19406. **Scrophularia Delavayi,** Franch. Pasture plant of 10–14 inches. Flowers bright yellow. Open alpine meadows on the summit of the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 14,000 ft. May 1921. N.W. Yunnan.

19409. **Prunus serrula,** Franch. var. Shrub or tree of 25–50 ft. Flowers white. In thickets and mixed forests on the Tali-Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. May 1921. N.W. Yunnan.

19414. **Skimmia melanocarpa,** Rehd. et Wils. Shrub of 8–16 ft. Flowers greenish-white, anthers yellowish. In thickets in ravines on the eastern flank of the Tali-Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 8,000 ft. May 1921. N.W. Yunnan.

19416. **Lonicera adenophora,** Franch. var. Shrub of 6–9 ft. Flowers deep dull crimson. Amongst scrub on rocky slopes in ravines on the eastern flank of the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 9,000 ft. May 1921. N.W. Yunnan.

19417. **Berberis pruinosa,** Franch. Dwarf spinous shrub of 1–2 ft. Flowers yellow. Ledges of cliffs and rocky slopes in ravines on the eastern flank of the Tali Shan. Lat. 25° 40′ N. Long. 100° 12′ E. Alt. 9,000 ft. May 1921. N.W. Yunnan.

19419. **Acanthopanax gracilistylus,** W. W. Sm. Spinous shrub of 6–10 ft. Branches arched. In immature fruit. In thickets on the ascent eastern flank of the Li-ti-ping, Yangtze-Mekong divide. Lat. 27° 12′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. June 1921. N. W. Yunnan.

19420. **Quercus fenestrata,** Roxb. Shrub or tree of 20–50 ft. In mixed oak forest in the Yangtze valley. Lat. 27° 6′ N. Long. 99° 54′ E. Alt. 6,000 ft. June 1921. N.W. Yunnan.

19421. **Corylus chinensis,** Franch. Tree of 30–50 ft. Flowers (?). Fruits (?). Bark scaling in long strips. In mixed thickets and forests on the western flank of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 35′ E. Alt. 9–10,000 ft. June 1921. N. W. Yunnan.

19422. **Quercus variabilis,** Blume. Tree of 40–60 ft. In mixed oak forest in the Yangtze valley. Lat. 27° 6′ N. Long. 99° 54′ E. Alt. 6,000 ft. June 1921. N.W. Yunnan.

19423. **Rosa.** Spinous shrub with arched branches of 6–12 ft. Flowers white, fragrant. Margins of thickets and by streams on the western flank of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 35′ E. Alt. 9,000 ft. June 1921. N.W. Yunnan.

19424. **Quercus variabilis,** Blume. Tree of 60 ft. In mixed oak forest in the Yangtze valley. Lat. 27° 6′ N. Long. 99° 54′ E. Alt. 6,000 ft. June 1921. N.W. Yunnan.

19425. **Castanea vulgaris,** Linn. Widely-spreading symmetrical tree of 50–60 ft. Flowers creamy-yellow. Mixed and oak forest in the Yangtze valley. Lat. 27° 12′ N. Long. 99° 48′ E. Alt. 6–7,000 ft. June 1921. N. W. Yunnan.

19426. **Quercus dentata,** Thunb. Widely-branched handsome tree of 40–60 ft. In mixed oak forest in the Yangtze valley. Lat. 27° 6′ N. Long. 99° 54′ E. Alt. 6,000 ft. June 1921. N.W. Yunnan.

19427. **Quercus variabilis,** Blume. Tree of 40–50 ft. In mixed oak forest in the Yangtze valley. Lat. 27° 12′ N. Long. 99° 48′ E. Alt. 6–7,000 ft. June 1921. N.W. Yunnan.

19428. **Quercus fenestrata,** Roxb. Tree of 40–50 ft. In mixed oak forest in the Yangtze valley. Lat. 27° 12′ N. Long. 99° 48′ E. Alt. 6–7,000 ft. June 1921. N.W. Yunnan.

19429. **Symplocos crataegoides,** Ham. Shrub of 12–20 ft. Flowers bright yellow. In thickets on the eastern flank of the Li-ti-ping, Yangtze-Mekong divide. Lat 27° 12′ N. Long. 99° 40′ E. Alt. 8,000 ft. June 1921. N.W. Yunnan.

19430. **Androsace dissecta,** Franch. Semi-procumbent plant of 10–16 inches. Flowers white. Shady moist situations in open pine and mixed forest on the eastern flank of the Li-ti-ping, Yangtze-Mekong divide. Lat. 27° 12′ N. Long. 99° 40′ E. Alt. 10,000 ft. June 1921. N.W. Yunnan.

19431. **Prunus** sp. aff. **Dielsiana,** Schneid. Shrub of 20–40 ft. In immature fruit. Stipules and bracts very glandular, glands marginal, the whole plant malodorous when fresh, with a strong acrid smell. In thickets by streams on the western flank of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 35′ E. Alt. 9–10,000 ft. June 1921. N.W. Yunnan.

19432. **Prunus conadenia,** Koehne. Shrub of 20–35 ft. In immature fruit. Flowers (?). In open thickets by streams on the western flank of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 35′ E. Alt. 9–10,000 ft. June 1921. N.W. Yunnan.

19433. **Viburnum atrocyaneum,** Clarke. Shrub of 4–7 ft. Flowers green. Amongst scrub in a ravine on the La-shi-pa, Yangtze divide. Lat. 26° 54′ N. Long. 100° 6′ E. Alt. 9–10,000 ft. May 1921. N.W. Yunnan.

19434. **Lonicera Henryi,** Hemsl. var. Semi-scandent shrub of 8–10 ft. Flowers deep golden-yellow, non-fragrant. Amongst scrub in a ravine on the La-shi-pa-Yangtze divide. Lat. 26° 54′ N. Long. 100° 6′ E. Alt. 9–10,000 ft. May 1921. N.W. Yunnan.

19435. **Rosa.** Weakly spinous shrub of 6–7 ft. Branches arched. Flowers deep rose, white at base. On cliffs in a ravine on the divide between La-shi-pa and the Yangtze valley. Lat. 26° 54′ N. Long. 100° 6′ E. Alt. 9–10,000 ft. May 1921. N.W. Yunnan.

19436. **Ulmus.** Tree of 30–50 ft. Flowers (?). Fruits (?). Main branches and stems covered with a corky fluted epidermis. Open situations in ravines on the La-shi-pa-Yangtze divide. Lat. 26° 54′ N. Long. 100° 6′ E. Alt. 9,000 ft. May 1921. N.W. Yunnan.

19438. **Androsace axillaris,** Franch. Trailing plant of 1–2 ft. Flowers white. Shady, grassy situations amongst rock and scrub on the banks of the Mekong river. Lat. 27° 24′ N. Long. 99° 6′ E. Alt. 6,000 ft. June 1921. N.W. Yunnan.

19439. **Sibthorpia pinnata,** Benth. Surculose plant of 1–2 inches. Flowers white. Shady banks and rocks amongst grass on the banks of the Mekong river. Lat. 27° 24′ N. Long. 99° 6′ E. Alt. 6,000 ft. June 1921. N.W. Yunnan.

19441. **Pterocarya Forrestii,** W. W. Sm. Tree of 30–40 ft. Flowers green. In immature fruit. Open forest on the eastern slope of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 40′ E. Alt. 8,000 ft. June 1921. N.W. Yunnan.

19442. **Actinidia callosa,** Lindl. Scandent shrub of 10–20 ft. Flowers crimson with a broad yellow margin. On scrub in thickets on the eastern slope of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 40′ E. Alt. 8,000 ft. June 1921. N.W. Yunnan.

19448. **Hypericum patulum,** Thunb. var. **Henryi,** Hort. Kew. Shrub of 2–4 ft. Flowers orange-yellow. By open streams on the Lichiang plain. Lat. 26° 54′ N. Long. 100° 12′ E. Alt. 8,200 ft. May 1921. N.W. Yunnan.

19449. **Corydalis cheirifolia,** Franch. Plant of 12–18 inches. Flowers bright blue, tipped white. Boggy pasture on the margins of pine forest on the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 38′ E. Alt. 11,500 ft. June 1921. N.W. Yunnan.

19451. **Anemone Davidi,** Franch. Plant of 6–12 inches. Flowers white. Open pasture on the margins of pine forest on the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 38′ E. Alt. 11,500 ft. June 1921. N.W. Yunnan.

19453. **Rubus.** Spinous shrub of 3–6 ft. Flowers (?). Forming dense thickets on the margins of pine forests on the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 38′ E. Alt. 11,500 ft. June 1921. N.W. Yunnan.

19454. **Stranvaesia Davidiana,** Decne. Shrub of 6–9 feet. Flowers grey-white. Open situations amongst scrub on the western flank of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 35′ E. Alt. 9,000 ft. June 1921. N.W. Yunnan.

19457. **Pedicularis.** Plant of 6–12 inches. Flowers bright rose with beak crimson. Forming dense carpets beneath pines in the open, never spreading beyond the shade on the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 38′ E. Alt. 12,000 ft. June 1921. N.W. Yunnan.

19459. **Ilex yunnanensis,** Franch. Shrub of 10–12 ft. Flowers grey-white, fruits scarlet. In thickets by streams on the western flank of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 98° 35′ E. Alt. 8–9,000 ft. June 1921. N.W. Yunnan.

19461. **Prunus vestita,** Wall. Shrub or tree of 20–45 ft. Flowers small, creamy-white. In open mixed forests and thickets on the western slope of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 35′ E. Alt. 8–9,000 ft. June 1921. N.W. Yunnan.

19463. **Enkianthus.** Symmetrical shrub of 18–20 ft. In fruit. In thickets by streams on the western flank of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 35′ E. Alt. 8–9,000 ft. June 1921. N W. Yunnan.

19464. **Stranvaesia Davidiana,** Decne. Shrub of 20–30 ft Flowers white-creamy. In open thickets on the western flank of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 35′ E. Alt. 9–10,000 ft. June 1921. N.W. Yunnan.

19465. **Primula Poissonii,** Franch., forma. Boggy, peaty meadow on the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 38′ E. Alt. 12,000 ft. June 1921. N.W. Yunnan.

19466. **Physalis peruviana,** Linn. Plant of 1–2 ft. Flowers green-yellow. Stony ground by streams in the Mekong valley. Lat. 27° 20′ N. Long. 99° 6′ E. Alt. 6,000 ft. June 1921. N.W. Yunnan.

19469. **Salvia Bulleyana,** Diels, var. Plant of 6–12 inches. Flowers pale orange with lip deep rosy purple. Moist meadows on the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 38′ E. Alt. 12,000 ft. June 1921. N.W. Yunnan.

19470. **Paederia tomentosa,** Blume. Scandent shrub of 6–9 ft. Flowers soft purple with grey-purple throat. Most malodorous (!). Open situations on scrub in the Mekong valley. Lat. 27° 25′ N. Long. 99° 6′ E. Alt. 6,000 ft. June 1921. N.W. Yunnan.

19471. **Cinnamomum Delavayi,** Lec. var. Aromatic shrub of 20–25 ft. Flowers olive-brown, fruits red. In open thickets on the western flank of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 35′ E. Alt. 9,000 ft. June 1921. N.W. Yunnan.

19472. **Picea brachytyla,** Pritzel, forma **rhombisquamea,** Stapf. Shapely tree of 40 70 ft. Forming forests on the summit of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 38′ E. Alt. 11,500–12,000 ft. June 1921. N.W. Yunnan.

19473. **Oreorchis foliosa,** Lindl. Plant of 4–12 inches. Flowers golden olive-brown, fragrant. Open pasture on the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 38′ E. Alt. 11,500 ft. June 1921. N.W. Yunnan.

19474. **Berberis Wallichiana,** DC. vel aff. Spinous shrub of 4–5 ft. Fruits glaucous purple. Open scrubby streams on the eastern flank of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 40′ E. Alt. 10,000 ft. June 1921. N.W. Yunnan.

19475. **Cephalotaxus sinensis,** Rehd. et Wils. Shrub of 20–40 ft. Open thickets by streams on the eastern flank of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. June 1921. N.W. Yunnan.

19476. **Cotoneaster turbinata,** Craib. Shrub of 10–16 ft. Flowers creamy-white. Open situations on the margins of thickets in the Mekong valley. Lat. 27° 25′ N. Long. 99° 6′ E. Alt. 6–7,000 ft. June 1921. N.W. Yunnan.

19478. **Prunus crataegifolius,** Hand.-Mzt. Shrub of 6–9 feet. Flowers rose-pink. On cliffs and bouldery slopes by streams amongst scrub, on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 9–10,000 ft. June 1921. N.W. Yunnan.

19482. **Lindera kariensis,** W. W. Sm. Shrub of 20–25 ft. In immature fruit. Flowers (?) probably green. In mixed thickets by streams on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 8–9,000 ft. June 1921. N.W. Yunnan.

19483. **Actinidia purpurea,** Rehder. Scandent shrub of 12–16 ft. Flowers fleshy, pure white. On scrub and rock in ravines on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 8–9,000 ft. June 1921. N.W. Yunnan.

19484. **Pyrus.** Shrub of 16–20 ft. Flowers rose. Shady situations amongst scrub in ravines on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 9–10,000 ft. June 1921. N.W. Yunnan.

19485. **Scindapsus.** Plant of several feet. On rocks and trees in shady ravines on the Mekong-Salwin divide, Salwin valley. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 6–7,000 ft. June 1921. N.W. Yunnan.

19486. **Veratrilla Bailloni,** Franch. Plant of 12–24 inches. Flowers dark olive-green. Lush mountain meadows on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 12–13,000 ft. June 1921. N.W. Yunnan.

19487. **Cremanthodium Forrestii,** Diels. Plant of 6–12 inches. Flowers golden-yellow. Stony, grassy slopes on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 13,000 ft. June 1921. N.W. Yunnan.

19488. **Saxifraga pallida,** Wall. var. **typica,** Engl. et Irmsch. Plant of 2-6 inches. Flowers creamy-white. Ledges of cliffs and moss-covered boulders on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 13,000 ft. June 1921. N.W. Yunnan.

19489. **Lillium Davidi,** Duch. Plant of 2-3 ft. Flowers deep orange-red, spotted deep purple. Stony, grassy slopes in and on the margins of thickets in side valleys on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 8,000 ft. June 1921. N.W. Yunnan.

19490. **Diplarche multiflora,** Hook. f. et Thoms. Shrub of 6–12 inches. Flowers white. Open, stony slopes and meadows and on rocks and cliffs on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 13,000 ft. June 1921. N.W. Yunnan.

19493. **Diapensia brevistyla,** W. E. Evans, MSS. Mat plant of many inches diameter, 6–12 or more. Flowers white. Moist, stony meadows on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 14,000 ft. June 1921. N.W. Yunnan.

19494. **Berneuxia thibetica,** Decne. Ledges of cliffs and humus-covered boulders in shady situations on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 10,000 ft. June 1921. N.W. Yunnan.

19495. **Cassiope selaginoides,** Hook. f. et Thoms. Shrubby plant of 2–5 inches. Flowers white flushed rosy-pink towards base. On stony slopes, boulders and cliffs on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 13-14,000 ft. June 1921. N.W. Yunnan.

19498. **Euonymus tingens,** Wall. Shrub of 20-25 ft. Flowers creamy-white, lined and marbled purple. Open thickets in side valleys on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 9–10,000 ft. June 1921. N.W. Yunnan.

19499. **Enkianthus.** Shrub of 6–12 ft. Flowers pale yellowish-rose, lined a deeper shade. In and on the margins of open thickets by streams on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 9–10,000 ft. June 1921. N.W. Yunnan.

19501. **Vaccinium oreotrephes,** W. W. Sm. Duplicate of 1917. Shrub of 6–18 inches. Flowers rose or white flushed rose. Open, moist, peaty, stony pasture or on rocks on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 13–14,000 ft. June 1921. N.W. Yunnan.

19504. **Actinidia callosa,** Lindl. Scandent shrub of 6–10 ft. Flowers pale crimson, margined creamy-white. On scrub in side valleys on the Mekong-Salwin divide. Lat 28° N. Long. 98° 50′ E. Alt. 8–9,000 ft. June 1921. N.W. Yunnan.

19505. **Betula utilis,** D. Don, var. Tree of 30–50 ft. Bark red (!). In mixed forests in side valleys on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 50′ E. Alt. 9–10,000 ft. June 1921. N.W. Yunnan.

19506. **Pyrus Vilmorini** (Schneider). Shrub of 20 ft. In immature fruit. Mixed thickets, rocky situations in ravines on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 50′ E. Alt. 9–10,000 ft. June 1921. N. W. Yunnan.

19507. **Machilus.** Shrub of 15–30 ft. Foliage and bark faintly aromatic. Flowers olive-brown. Thickets in ravines on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 50′ E. Alt. 9,000 ft. June 1921. N.W. Yunnan.

19508. **Senecio acerifolius,** C. Winkl. Surculose plant of 2–2½ ft. Flowers orange-yellow. Moist pasture by streams in side valleys on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 50′ E. Alt. 10,000 ft. June 1921. N.W. Yunnan.

19509. **Lonicera trichosantha,** Bur. et Franch. Erect branched shrub of 9–18 ft. Flowers pale golden-yellow, non-fragrant. Thickets by streams in side valleys on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 50′ E. Alt. 9,000 ft. June 1921. N.W. Yunnan.

19510. **Pyrus Vilmorini** (Schneider). Shrub of 10–20 ft. Flowers (?) probably crimson. Open, shady situations on bouldery slopes on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 50′ E. Alt. 10,000 ft. June 1921. N.W. Yunnan.

19511. **Prunus brachypoda,** Batal. Tree of 40–50 ft. Flowers creamy-white. In mixed thickets on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 8–9,000 ft. June 1921. N.W. Yunnan.

19513. **Paraquilegia microphylla,** Drumm. et Hutch. Cushion plant of 10–16 inches diameter. Flowers pale bluish-lavender, anthers and nectaries orange. Firmly rooted in crevices of shady dry cliffs in ravines on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 11,000 ft. June 1921. N.W. Yunnan.

19514. **Primula bella,** Franch. Plant of 1–2 inches. Flowers rose-purple—drying blue-purple—with throat white. Moist, peaty, stony, alpine meadows and on boulders on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 13–14,000 ft. June 1921. N.W. Yunnan.

19516. **Primula silaensis,** Petitm. Massed plant of 2–4 inches. Flowers deep blue-purple, fragrant. Moist, stony, peaty meadows on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 14–14,500 ft. June 1921. N.W. Yunnan.

19518. **Vaccinium modestum,** W. W. Sm. Dwarf shrub of 4–14 inches. Flowers dull rose, tinged green. Open, peaty, moist, stony pasture and on rocks on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 13,000 ft. June 1921. N.W. Yunnan.

19519. **Cassiope palpebrata,** W. W. Sm. Mossy plant of 1–1½ inches. Flowers creamy-white. Forming mats on rocks and moist, stony meadows on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 13–14,000 ft. June 1921. N.W. Yunnan.

19520. **Salix Lindleyana,** Wall. Prostrate shrub of a few inches. On moist, stony pasture on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 14,000 ft. June 1921. N.W. Yunnan.

19521. **Berberis** sp. aff. **diaphana,** Maxim. Spinous shrub of 3–5 ft. Flowers pale orange-yellow. Scrub on the margins of pine forests on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 10–11,000 ft. June 1921. N.W. Yunnan.

19522. **Primula lepta,** Balf. f. et Forrest. Plant of 3–6 inches. Flowers deep blue-purple, fragrant. Open, moist pasture on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 13–14,000 ft. June 1921. N.W. Yunnan.

19523. **Primula Wardii,** Balf. f. Plant of 6–10 inches. Flowers lavender-rose, with grey eye. Open, moist pasture by streams on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 13,000 ft. June 1921. N.W. Yunnan.

19524. **Stellaria decumbens,** Edgew. Mat plant many inches in diameter. Flowers white. On moist, peaty ground on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 14,000 ft. June 1921. N.W. Yunnan.

19525. **Primula amethystina,** Franch. Plant of 4–9 inches. Flowers deep purple-blue. Moist, peaty, stony meadows on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 14,000 ft. June 1921. N.W. Yunnan.

19527. **Nomocharis euxantha,** W. W. Sm. et W. E. Evans. Plant of 3–5 inches. Flowers golden-yellow, very faintly spotted and tinged crimson on base interior. Stony meadow on the margin of rhododendron scrub on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 14,000 ft. June 1921. N.W. Yunnan.

19528. **Nephrodium Filix-mas,** Rich. var. Specimens undeveloped (!). Amongst rocks in ravines on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 10,000 ft. June 1921. N.W. Yunnan.

19530. **Primula stragulata,** Balf. f. et Forrest. Clustered plant of 1 inch. Flowers deep rosy-purple, eye white. Moist, peaty moorland on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. June 1921. N.W. Yunnan.

19532. **Geranium Robertianum,** Linn. Plant of 12-14 inches. Flowers pale rose. Dry situations amongst rocks on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 10,000 ft. June 1921. N.W. Yunnan.

19533. **Acer caudatum,** Wall. var. Shrub or tree of 20–40 ft. Flowers dull green. In mixed forests on the N.W. slopes of the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 9,000 ft. June 1921. N.W. Yunnan.

19537. **Pyrus foliolosa,** Wall. Stunted shrub of 3–4 ft. Flowers immature (!) probably crimson. Very rocky situations on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 13,000 ft. June 1921. N.W. Yunnan.

19538. **Cotoneaster** sp. aff. **acuminata,** Lindl. Shrub of 6–9 ft. Flowers deep crimson. Rocky situations by streams in ravines on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 9,000 ft. June 1921. N.W. Yunnan.

19539. **Machilus Kurzii,** King, var. Shrub of 20–40 ft. In fruit, immature. In mixed thickets in ravines on the Mekong-Salwin divide. Bark, foliage and seeds aromatic. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 9,000 ft. June 1921. N.W. Yunnan.

19542. **Asteropyrum peltatum,** Drumm. et Hutch. Creeping plant of 1–1½ inches. Flowers white. Moist, mossy, shady banks of streams in side valleys on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 10–11,000 ft. June 1921. N.W. Yunnan.

19545. **Prunus crataegifolius,** Hand.-Mzt. Shrub of 15–20 ft. Flowers pink. Open thickets by streams on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

19546. **Pyrus.** Shrub of 20 ft. Flowers light red-crimson. On rocky slopes in open thickets on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19547. **Pyrus.** Shrub of 10–15 ft. Flowers deep crimson. On scrub clad cliffs and slopes in ravines on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

19551. **Nomocharis aperta,** W. W. Sm. et W. E. Evans, var. **Forrestii,** W. W. Sm. et W. E. Evans. Plant of 12–18 inches. Flowers white, more or less flushed rose-purple on exterior, with interior spotted and a crimson-purple blotch at base. Open meadows on the margins of pine forests on the Li-ti-ping. Lat. 27° 12′ N. Long. 99° 38′ E. Alt. 11,500–12,000 ft. June 1921. N.W. Yunnan.

19557. **Prunus venosa,** Koehne. Tree of 30–45 ft. In fruit, immature. Thickets by streams on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 8–9,000 ft. June 1921. N.W. Yunnan.

19558. **Torreya grandis,** Fortune. Shrub or tree of 30–50 ft. In immature fruit. In mixed and pine forest on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 7–8,000 ft. June 1921. N.W. Yunnan.

19559. **Primula limbata,** Balf. f. et Forrest. Plant of 6–10 inches. Flowers deep purplish-blue, eye grey, fragrant. Open, moist, stony pasture and on ledges of damp cliffs on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 12,000 ft. June 1921. N.W. Yunnan.

19561. **Enkianthus.** Shrub of 6–10 ft. Flowers yellowish, lined and tipped rose. Margins of open thickets amongst scrub on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 9,000 ft. June 1921. N.W. Yunnan.

19563. **Primula biserrata,** G. Forrest. Plant of 9–12 inches. Flowers soft yellow lined orange, fragrant. On shady, moist rocks and cliffs and stony pasture in ravines on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 12–13,000 ft. June 1921. N.W. Yunnan.

19568. **Vaccinium Delavayi,** Franch. Shrub of 10–18 inches. Flowers bright rose or white flushed rose. Ledges of cliffs and humus-covered boulders on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 12,000 ft. July 1921. N.W. Yunnan.

19572. **Omphalogramma Souliei,** Franch. Plant of 12–20 inches. Flowers deep wine-purple. Shady, moist peaty pasture on the margins of pine forest on the Li-ti-ping. Lat. 27° 12′ N. Long. 99° 38′ E. Alt. 12,000 ft. June 1921. N.W. Yunnan.

19573. **Iris.** Plant of 14 inches. Flowers purplish-blue, falls marked yellowish-grey, non fragrant. Openings in pine forests on the eastern flank of the Li-ti-ping. Lat. 27° 12′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. June 1921. N.W. Yunnan.

19575. **Iris.** Plant of 2–5 inches, in colonies of single plants or clumps of 3–6. Flowers deep rosy purple, fragrant, falls marked orange. Open, dry pasture on the margins of scrub on the hills enclosing Lu-tien. Lat. 27° 12′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. June 1921. N.W. Yunnan.

19577. **Diapensia purpurea,** Diels. Cushion plant of 6–18 inches diameter. Flowers deep clear rose-crimson. Moist, gravelly, peaty meadows and by streams on the Londre pass, Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 14–15,000 ft. July 1921. N.W. Yunnan.

19578. **Anemone polycarpa,** W. E. Evans. Plant of 6–10 inches. Flowers deep indigo-purple. Stony meadowland on the margins of thickets on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 13,000 ft. June 1921. N.W. Yunnan.

19583. **Pyrus.** Shrub of 25–40 ft. Flowers creamy-white. In mixed thickets on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 10,000 ft. June 1921. N.W. Yunnan.

19584. **Syringa yunnanensis,** Franch. Shrub of 4–7 feet, Flowers fragrant, white, flushed exterior lilac-purple. Patches on open grassy slopes and meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 11–12,000 ft. June 1921. N.W. Yunnan.

19585. **Leptodermis Forrestii,** Diels. Shrub of 2–3 feet. Flowers deep lavender. Shady situations on cliffs in ravines on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 10–11,000 ft. June 1921. N.W. Yunnan.

19586. **Braya verticillata,** W. W. Sm. Plant of 3–5 inches. Flowers white or white flushed rose-purple. On screes and ledges of cliffs on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,000 ft. June 1921. N.W. Yunnan.

19587. **Astragalus yunnanensis,** Franch. Plant of 3–5 inches. Flowers orange-yellow. Standard lightest or white. On screes or rocky pasture on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. July 1921. N.W. Yunnan.

19589. **Primula chrysopa,** Balf. f. et Forrest. Plant of 9–14 inches. Flowers soft purplish-blue with tube and throat orange-yellow, fragrant. Open, moist, stony pasture by streams on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. July 1921. N.W. Yunnan.

19590. **Anemone trullifolia,** Hook. f. et Thoms. var. **Souliei,** Finet et Gagnep. Plant of 3–9 inches. Flowers canary yellow, greenish on exterior. Moist, stony meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,000 ft. June 1921. N.W. Yunnan.

19591. **Arenaria Forrestii,** Diels. Matted plant of 1–1½ inches. Flowers pale shell pink. Moist, peaty, gravelly pasture on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,500 ft. June 1921. N.W. Yunnan.

19592. **Hedysarum** sp. aff. **sikkimense,** Benth. Plant of 4–7 inches. Flowers deep wine purple almost black on standard. Screes and ledges of cliffs on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,500 ft. June 1921. N.W. Yunnan.

19593. **Rosa.** Spinous shrub of 5–8 ft. Stems arched, deep purple. Flowers pale rose-pink, margins of thickets and shady moist situations in ravines on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 9–10,000 ft. June 1921. N.W. Yunnan.

19594. **Cremanthodium bupleurifolium,** W. W. Sm. Plant of 10–12 inches. Ray florets bright yellow, disc florets green-orange, fragrant. Open alpine meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13,000 ft. June 1921. N.W. Yunnan.

19595. **Trollius pumilus,** D. Don. Plant of 10–14 inches. Flowers interior orange-yellow, exterior ruddy purple, nectaries tipped saffron-red. Moist alpine meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,000 ft. June 1921. N.W. Yunnan.

19596. **Eriophyton Wallichianum,** Benth. Plant of 2–3 inches. Flowers greyish rose-pink. On screes on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,500 ft. June 1921. N.W. Yunnan.

19598. **Epimedium sagittatum,** Baker, vel aff. Plant of ½–2 ft. Flowers pale yellow. Margins of thickets and forests on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 8,000 ft. July 1921. N.W. Yunnan.

19599. **Prunus conadenia,** Koehne. Shrub of 20–30 ft. In fruit, fruits deep crimson. In shady pine and mixed forests on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 9,000 ft. July 1921. N.W. Yunnan.

19600. **Paraquilegia microphylla,** Drumm. et Hutch. Plant of 2–10 inches. Flowers rosy-lavender, nectaries orange. On cliffs and screes on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14–14,500 ft. June 1921. N.W. Yunnan.

19601. **Saxifraga melanocentra,** Franch. Plant of 2–5 inches. Flowers creamy-yellow, orange at base. On boulders and ledges of cliffs on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,000 ft. June 1921. N.W. Yunnan.

19602. **Androsace Wardii,** W. W. Sm. Cushion tufted plant of 1 inch. Flowers dull crimson-rose, eye darkest. On ledges and in crevices of cliffs on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,500 ft. July 1921. N.W. Yunnan.

19603. **Anemone rupicola,** Camb. Plant of 3–5 inches. Flowers, interior soft white, bluish-purple exterior, extra large; foliage purplish beneath. On screes and stony pasture on the margins of pine forest on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. July 1921. N.W. Yunnan.

19604. **Woodsia.** Tufted plant of 1–2 inches. Dry situations in crevices of overhanging cliffs on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13,000 ft. July 1921. N.W. Yunnan.

19605. **Braya** sp. aff. **Forrestii,** W. W. Sm. Cushion plant several inches in diameter. Flowers white (?). On moist gravelly meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 15,000 ft. July 1921. N.W. Yunnan.

19606. **Primula vernicosa,** F. K. Ward. Plant of 1 inch. Flowers white. Open alpine pasture on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19608. **Lloydia.** Matted plant of ½ inch. Flowers white, lined deep ruddy purple exterior. On moist alpine meadows and rocks on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 16,000–16,500 ft. July 1921. N.W. Yunnan.

19609. **Populus szechuanica,** Schneid. Tree of 40–70 ft. In fruit immature. Open situations in mixed forests on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

[Same as 19927 probably, of which seed sent 10/8.]

19610. **Astragalus acaulis,** Baker. Plant of 1–1½ inches. Flowers pale creamy-yellow, keel tipped olive-brown. Open screes and ledges of cliffs on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 12–13,000 ft. July 1921. N.W. Yunnan.

19611. **Pedicularis.** Plant of 2–5 inches. Flowers rose, beak darkest. Open moist meadows and on screes on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14–14,500 ft. July 1921. N.W. Yunnan.

19612. **Astragalus.** Plant of 4–6 inches. Flowers deep purple-blue, keel and standard darkest. On screes and stony meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19613. **Anemone narcissiflora,** Linn. Plant of 18–24 inches. Flowers purple-blue, exterior darkest. Shady situations on cliffs and rocky slopes on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 11–12,000 ft. July 1921. N.W. Yunnan.

19614. **Lonicera thibetica,** Bur. et Franch. Shrub of 4-5 ft. Flowers rose-pink. Open situations amongst scrub on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 8–9,000 ft. July 1921. N.W. Yunnan.

19615. **Pedicularis.** Plant of 9–14 inches. Flowers yellowish-white, beak crimson. On lush moist meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 11–12,000 ft. July 1921. N.W. Yunnan.

19616. **Clematis pseudopogonandra,** Finet et Gagnep. Semi-scandent shrub of 2-4 ft. Flowers greenish-grey interior, exterior deep dull purple. In crevices of cliffs and on scrub on the ledges thereof on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

19617. **Nomocharis saluenensis,** Balf. f. forma **tricolor,** W. W. Sm. et W. E. Evans. Plant of 1 to fully 2 ft. Flowers rose-purple with a clear yellowish centre minutely spotted and based deep crimson purple. Open lush meadows on the margins of pine forests on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

19618. **Pleione scopulorum,** W. W. Sm. Plant of 7–10 inches. Flowers scarlet-rose. Shady situations in scrub and on rocks in ravines on the ascent of the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 10,000 ft. July 1921. Tsarong, S.E. Tibet.

19620. **Aster** sp. aff. **brachytrichus,** Franch. Plant of 4-8 inches. Ray florets bright blue, disc florets ruddy orange. Stony alpine meadows on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 14,500 ft. July 1921. Tsarong, S.E. Tibet.

19621. **Sibiraea laevigata,** Maxim. Shrub of 4–6 ft. Flowers dull olive-green. Open scrub by streams on the ascent of the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 12,000 ft. July 1921. Tsarong, S.E. Tibet.

19622. **Primula apoclita,** Balf. f. et Forrest. Plant of 9–14 inches. Flowers deep rich purple, fragrant. Moist alpine meadows on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. July 1921. Tsarong, S.E. Tibet.

19623. **Viburnum betulifolium,** Batal. Shrub of 5–7 ft. Flowers creamy-white. In open scrub in side valleys on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 10,000 ft. July 1921. Tsarong, S.E. Tibet.

19624. **Vaccinium Delavayi,** Franch. Shrub of 2 ft. Flowers white. On cliffs in side valleys on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 11,000 ft. July 1921. Tsarong, S.E. Tibet.

19625. **Picrorrhiza Kurrooa,** Benth. Surculose plant of 2–5 inches. Flowers purple. Open stony meadows and on humus-covered boulders on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 11,000 ft. July 1921. Tsarong, S.E. Tibet.

19627. **Clintonia udensis,** Trautv. et Meyer. Plant of 9–12 inches. Flowers blue. In shady pine and mixed forests on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 10–11,000 ft. June 1921. N. W. Yunnan.

19629. **Ypsilandra yunnanensis,** W. W. Sm. et J. F. Jeff. Plant of 6–12 inches. Flowers olive-green. Margins of thickets on moist, stony meadows on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 11,000 ft. July 1921. Tsarong, S.E. Tibet.

19630. **Mandragora caulescens,** Clarke. Plant of 6–9 inches. Flowers lined greenish-crimson. Stony alpine meadows on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 13,000 ft. July 1921. Tsarong, S.E. Tibet.

19632. **Nomocharis Souliei,** W. W. Sm. et W. E. Evans. Plant of 6–14 inches. Flowers nodding, fragrant, deep crimson-maroon. Moist pasture in and on the margins of thickets and scrub on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 12–13,000 ft. July 1921. Tsarong, S.E. Tibet.

19634. **Parrya linearifolia,** W. W. Sm. Plant of 2–3 inches. In fruit immature. Limestone screes and wet limy meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,000 ft. June 1921. N.W. Yunnan.

19635. **Euonymus amygdalifolius,** Franch. Shrub of 20–25 ft. Flowers pale ruddy purple. Shady thickets by streams in side valleys on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19636. **Pyrus.** Shrub of 15–20 ft. Flowers crimson. In mixed thickets on rocky slopes on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 10–11,000 ft. July 1921. N.W. Yunnan.

19637. **Pyrus.** Shrub of 12–25 ft. Flowers crimson. On cliffs and rocky slopes in ravines on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 10–11,000 ft. July 1921. N.W. Yunnan.

19638. **Prunus crataegifolius,** Hand.-Mzt. Shrub of 20–30 ft. Flowers pink. Fruits immature. In thickets by streams in side valleys on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19639. **Euptelea pleiosperma,** Hook. f. et Thoms. Shrub of 20–30 ft. In fruit. In mixed thickets by streams on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19640. **Gardneria angustifolia,** Wall. Scandent shrub of 10–20 ft. Flowers dull creamy-yellow interior, exterior dull purple. On scrub and in thickets by streams on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 8,000 ft. July 1921. N.W. Yunnan.

19641. **Tetracentron sinense,** Oliver. Shrub or tree of 20–45 ft. Flowers olive-brown. In thickets and mixed forests on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 8,000 ft. July 1921. N. W. Yunnan.

19642. **Pyrus.** Shrub of 12–18 ft. Flowers dark crimson. In thickets on the slopes of the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19643. **Euonymus theifolius,** Wall. Shrub of 20–25 feet. Flowers pale green. Thickets by streams in side valleys on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 55′ E. Alt. 9,000 ft. July 1921. N. W. Yunnan.

19644. **Circaea alpina,** Linn. var. Plant of 4–7 inches. Flowers white. Damp situations. Amongst scrub by streams on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 55′ E. Alt. 9,000 ft. July 1921. N. W. Yunnan.

19645. **Pyrus Wilsoniana** (Schneider). Shrub of 20–40 ft. In fruit. Mixed thickets and forests on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 55′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19646. **Deutzia corymbosa,** R. Br. Shrub of 1–2½ ft. Flowers white, flushed purplish exterior. Undershrub in shady mixed forests on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 8,000 ft. July 1921. N.W. Yunnan.

19647. **Pieris ovalifolia,** D. Don, var. **elliptica,** Rehd. et Wils. Shrub of 2–4 ft. Flowers waxy white, fragrant. In shady, dry, mixed forests on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 8,000 ft. July 1921. N.W. Yunnan.

19648. **Lonicera syringantha,** Maxim. var. **minor,** Maxim. Matted dwarf shrub of 1–2 ft. Flowers white, flushed faintly purplish-rose, deepest on exterior. Dry situations on cliffs in side valleys on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 11–12,000 ft. July 1921. N.W. Yunnan.

19649. **Meconopsis.** Plant of 6–12 inches. Flowers deep purplish-blue, anthers grey. On screes and ledges of cliffs on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 12–13,000 ft. July 1921. N. W. Yunnan.

19650. **Androsace Chamaejasme,** Host, forma. (? **A. mollis,** Hand.-Mzt.). Cushion plant of 12–18 ins. diameter. Flowers white, flushed rose to deep rose with eye crimson. On cliffs and damp gravelly meadows on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 14–14,500 ft. July 1921. N.W. Yunnan.

19652. **Saussurea villosa,** Franch. Plant of 3–5 inches. Flowers deep purplish-blue. Ledges of cliffs and limestone screes on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

19653. **Cotoneaster rubens,** W. W. Sm. Shrub of 2 ft. Flowers rose. Ledges of cliffs in side valleys on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

19654. **Salix.** Dwarf shrub of 1–1½ ft. ♀ In fruit. On cliffs and rocky slopes on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 12,000 ft. July 1921. N.W. Yunnan.

19656. **Pyrola atropurpurea,** Franch. Plant of 6–12 inches. Flowers fleshy, purplish-yellow, margined yellow. Damp shady forests on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 7–9,000 ft. July 1921. N.W. Yunnan.

19657. **Prunus serrula,** Franch. Shrub or tree of 25–50 ft. In immature fruit. In mixed forests on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 9,000 ft. July 1921. N.W. Yunnan.

19658. **Urtica?** Plant of 1½–2 ft. Flowers green (!). Open, dry, rocky situations on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

19659. **Buddleia** sp. aff. **Farreri,** Balf. f. et W. W. Sm. Shrub of 6–12 ft. Flowers (?). In fruit. Open, dry, stony hillsides on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 8–10,000 ft. July 1921. N.W. Yunnan.

19660. **Meconopsis integrifolia,** Franch. var. **brevistyla,** Prain. Plant of 18–24 inches. Flowers pale yellow. Stony pasture slopes on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 12,000 ft. July 1921. N.W. Yunnan.

19661. **Salix.** Shrub of 6–8 ft. In fruit. Thickets by streams on the Mekong-Salwin Divide. Lat. 27° 36′ N. Long. 98° 50′ E. Alt. 12,000 ft. July 1921. N.W. Yunnan.

19662. **Senecio.** Plant of 9–14 inches. Flowers deep yellow. Moist pasture by streams on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 50′ E. Alt. 12–13,000 ft. July 1921. N.W. Yunnan.

19663. **Primula hymenophylla,** Balf. f. et Forrest. Plant of 12–20 inches. Flowers rose with yellow eye. On ledges of cliffs and rocky slopes in side valleys on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 11–12,000 ft. July 1921. N.W. Yunnan.

19664. **Cotoneaster.** Semi-procumbent shrub of 2-ft. Flowers crimson. On cliffs, boulders and rocky slopes in side valleys on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 10–11,000 ft. July 1921. N.W. Yunnan.

19665. **Buddleia incompta,** W. W. Sm. Shrub of 2 ft. In fruit. On cliffs and dry rocky slopes on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 50′ E. Alt. 8,000 ft. July 1921. N.W. Yunnan.

19666. **Jasminum pulvinatum,** W. W. Sm. Matted cushion shrub of 1–2 ft. Flowers yellow. Stony pasture and on cliffs on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 12–13,000 ft. July 1921. N.W. Yunnan.

19667. **Myosotis sylvatica,** Hoffm. Plant of 6–14 inches. Flowers clear blue. Open, moist, stony pasture on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 11–12,000 ft. July 1921. N.W. Yunnan.

19668. **Meconopsis venusta,** Prain. Plant of 6–10 inches. Flowers deep ruddy purple, anthers orange-yellow. Open, stony pasture on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. July 1921. N.W. Yunnan.

19669. **Anemone Davidi,** Franch. Plant of 12–14 inches. Flowers white. Grassland on the margins of thickets and forests on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 11–12,000 ft. July 1921. N. W. Yunnan.

19670. **Paraquilegia microphylla,** Drumm. et Hutch. Cushion plant of 6–12 inches diameter. Flowers pure white, occasionally very faintly flushed pale blue on exterior, nectaries and stamens golden-yellow. Ledges and crevices of dry cliffs and on stony slopes on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13,000 ft. July 1921. N.W. Yunnan.

19671. **Saussurea subulata,** Clarke. Plant of 2–3 inches. Flowers immature. Screes and stony pasture on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19672. **Solms-Laubachia minor,** Hand.-Mzt. vel aff. Cushion plant of 6–12 inches diameter. In fruit. Ledges of cliffs and on screes on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. July 1921. N.W. Yunnan.

19673. **Aster likiangensis,** Franch. Plant of 3–9 inches. Disc florets dull green-yellow, ray florets blue-purple. Alpine stony meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19675. **Primula brevifolia,** G. Forrest. Plant of 8–11 inches. Flowers fragrant, deep blue-purple. Open, stony, moist moorland on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19677. **Corydalis pachycentra,** Franch. Plant of 6–10 inches. Flowers bright blue, tipped darkest. Open pasture on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19678. **Primula monantha,** W. W. Sm. et Forrest. Rare (!). Plant of 1½–2½ inches. Flowers soft purplish-rose. On moist, stony pasture on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 14,500 ft. July 1921. N.W. Yunnan.

19679. **Ceterach** sp. ? Plant of 6–12 inches. Crevices and ledges of dry limestone cliffs on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 12,000 ft. July 1921. N.W. Yunnan.

19680. **Paracaryum glochidiatum,** Benth. Plant of 2½–3 ft. Flowers deep ruddy purple. Meadows on the margins of forests on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

19681. **Thermopsis inflata,** Camb. Plant of 4–8 inches. Flowers pale orange-yellow. Open woodlands and pasture on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

19682. **Lindera kariensis,** W. W. Sm. Shrub of 6–20 feet. In immature fruit. Open thickets by streams on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19683. **Meconopsis eximia,** Prain. Plant of 8–15 inches. Flowers bright blue-purple, anthers grey-yellow. Open, stony pasture on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19684. **Pedicularis.** Plant of 3–5 inches. Flowers yellow. Moist, stony moorland on the Mekong-Yangtze divide. Lat. 27° 30′ N. Long. 99° 10′ E. Alt. 13,000 ft. July 1921. N.W. Yunnan.

19685. **Chionocharis Hookeri,** (Clarke), Johnston. Cushion plant of 4–12 inches diameter. Flowers bright clear blue. On cliffs and stony moist moorland. On the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. July 1921. N.W. Yunnan.

19686. **Parrya linearifolia,** W. W. Sm. Cushion plant of 4–8 inches diameter. Flowers pale rose-pink, fragrant. Ledges of cliffs and stony slopes on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 14–14,800 ft. July 1921. N.W. Yunnan.

19687. **Parrya Forrestii,** W. W. Sm. var. Cushion plant of 3–6 inches diameter. In fruit, immature. Stony, moist moorland on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. July 1921. N.W. Yunnan.

19688. **Astragalus** sp. aff. **yunnanensis,** Franch. Plant of 3–5 inches. Flowers pale orange-yellow, standard tipped white. Open, dry, stony pasture on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19689. **Thermopsis barbata,** Royle, vel v. aff. Plant of 10–16 inches. Flowers deep maroon-crimson. Openings in thickets by streams on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

19690. **Caragana jubata,** Poir. Spinous matted shrub of 1–2½ ft. Flowers yellowish-white, flushed and veined deep rose-crimson, standard darkest. Open, dry, rocky slopes on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 12–13,000 ft. July 1921. N. W. Yunnan.

19691. **Pedicularis.** Plant of 3–5 inches. Flowers yellow. Stony, moist meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 12,000 ft. July 1921. N.W. Yunnan.

19693. **Salix.** Dwarf shrub of 6 inches. Moist, stony alpine meadow on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 14,000 ft. July 1921. Tsarong, S.E. Tibet.

19694. **Meconopsis eximia,** Prain. Plant of 3–7 inches. Flowers deep blue-purple, anthers grey-yellow. Moist, stony meadow on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 14,000 ft. July 1921. Tsarong, S.E. Tibet.

19697. **Stranvaesia Davidiana,** Decne. Shrub of 20 feet Flowers white, fruits red. In dense mixed thickets in side valleys on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 30′ E. Alt. 9,000 ft. July 1921. N.W. Yunnan.

19699. **Pedicularis.** Plant of 4–7 inches. Flowers deep crimson-rose, beak darkest. Open, stony alpine pasture on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 13,000 ft. July 1921. Tsarong, S.E. Tibet.

19700. **Phlomis rotata,** Benth. Plant of 1 inch. Flowers pale rose. Stony, moist, alpine pasture on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. July 1921. N.W. Yunnan.

19703. **Symplocos Forrestii,** W. W. Sm. Shrub of 20 ft. Flowers (?) foliage almost spinous. In thickets in side valleys on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19705. **Meconopsis impedita,** Prain. Plant of 6–12 inches. Flowers deep ruddy purplish-maroon, anthers orange. Stony alpine meadows on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 13,000 ft. July 1921. N.W. Yunnan.

19706. **Sedum.** Cushion plant of 12–18 inches diameter. Flowers crimson. On ledges and in crevices of cliffs on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,500 ft. July 1921. N.W. Yunnan.

19707. **Beesia calthaefolia,** Balf. f. et W. W. Sm. Plant of 12–16 inches. Flowers creamy-white. Lush pasture by streams and on the margins of thickets on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 11–12,000 ft. July 1921. N.W. Yunnan.

19708. **Chimaphila japonica,** Miq. Plant of 2–8 inches. Flowers waxy-white. Shady mixed forests on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 8–9,000 ft. July 1921. N.W. Yunnan.

19709. **Tsuga yunnanensis,** Masters. Shrub or tree of 20–60 ft. In mixed and conifer forests on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 7–8,000 ft. July 1921. N.W. Yunnan.

19711. **Viola biflora,** Linn. var. Plant of 4–6 inches. Flowers deep yellow. In thickets and mixed forests on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 7–9,000 ft. July 1921. N.W. Yunnan.

19712. **Crepis Gillii,** S. Moore. Plant of 1–1½ inches. Flowers light orange-yellow, fragrant. On open stony pasture and on screes on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 13–14,000 ft. July 1921. N.W. Yunnan.

19720. **Ulmus.** Tree of 30 50 ft. Foliage only; aromatic. In thickets in side valleys on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 8,000 ft. July 1921. N.W. Yunnan.

19721. **Caragana.** Cushion plant of 6 12 inches diameter. Flowers crimson-rose, standard darkest. On cliffs and rocky alpine pasture on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 13–14,000 ft. July 1921. N.W. Yunnan

19722. **Acanthopanax evodiaefolius,** Franch. var. **ferrugineus,** W. W. Sm. Shrub of 12–20 ft. Flowers green. In thickets by streams in side valleys on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 9,000 ft. July 1921. N.W. Yunnan.

19723. **Pyrus.** Shrub of 20 ft. Flowers pale rose or white flushed rose exterior. In thickets by streams in side valleys on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 9,000 ft. July 1921. N. W. Yunnan.

19724. **Trollius pumilus,** D. Don. Plant of 6–8 inches. Flowers orange-yellow, flushed purplish-red exterior. Moist alpine meadows on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19725. **Corydalis** sp. aff. **benecincta,** W. W. Sm. Plant of 3–5 inches. Flowers pale purple, tips darkest. Stony pasture and on screes on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 12,000 ft. July 1921. N.W. Yunnan.

19726. **Androsace Delavayi,** Franch. Mat plant of 6 inches to several feet in diameter. Flowers from white to deep rose. On moist stony alpine meadows on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,500 ft. July 1921. N.W. Yunnan.

19727. **Meconopsis compta,** Prain. Plant of 6–14 inches. Flowers pale blue, anthers yellow. On alpine meadows and grassy slopes on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 13–14,000 ft. July 1921. N.W. Yunnan.

19728. **Polygonum sphaerostachyum,** Meissn. Plant of 1–2 inches. Flowers brilliant cerise-pink, drying much lighter. Stony moist alpine meadows on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19730. **Primula dryadifolia,** Franch. Plant of 1–2 inches. Flowers deep lake-rose. Forming mats fully a foot in diameter. On screes and ledges of cliffs on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,500 ft. July 1921. N.W. Yunnan.

19732. **Acer Davidi,** Franch. var. **horizontale,** Pax. Shrub or tree of 20–40 ft. In fruit. In mixed thickets and forests on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19736. **Daphne retusa,** Hemsl. Shrub of 1–2 ft. Flowers white, flushed purplish-rose exterior, fragrant. In shady thickets and pine forests on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 99° 10′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19738. **Caragana crassicaulis,** Benth. Cushion plant of 6–18 inches diameter. Flowers orange. Dry, grassy slopes and on ledges of cliffs on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19740. **Epipactis Royleana,** Lindl. Plant of 1½–2½ ft. Flowers greenish, flushed and lined dull ruddy-purple. Margins of mixed thickets and forests on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19745. **Scrophularia Delavayi,** Franch. Plant of 12–18 inches. Flowers deep orange. Open, grassy, rocky slopes on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

19750. **Erysimum bracteatum,** W. W. Sm. Plant of 6–16 inches. Flowers deep orange. On ledges of dry cliffs and dry stony pasture on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 11–12,000 ft. July 1921. N.W. Yunnan.

19752. **Ephedra Gerardiana,** Wall. var. **sikkimensis,** Stapf. Dwarf shrubby plant of 6-18 inches. Flowers olive-yellow. Dry, stony pasture on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

19753. **Iris.** Plant of 12–18 inches. Flowers purplish-blue with grey markings. Open, moist meadows on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

19755. **Meliosma pungens,** Wall. Shrub of 18–20 ft. In (old) fruit. In mixed thickets, side valleys on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19756. **Cotoneaster** sp. aff. **microphylla,** Wall. Spreading shrub of 3 6 ft. In fruit. Amongst scrub and rock in side valleys on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 9,000 ft. July 1921. N.W. Yunnan.

19757. **Thuidium.** Covering damp rocks and cliffs in shady side valleys on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19759. **Primula dryadifolia,** Franch. Cushion plant of 9–14 inches diameter, scapes rising to 3 inches. Flowers soft rose with eye and tube crimson-rose, fragrant. Ledges of cliffs and loose rubbly screes on the mountains north of Atuntze about Adong. Lat. 28° 35′ N. Long. 98° 56′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19761. **Philadelphus Delavayi,** Henry. Shrub of 10–15 ft. In fruit. In open thickets by streams on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 53′ E. Alt. 10–11,000 ft. July 1921. N.W. Yunnan.

19762. **Asplenium Trichomanes,** Linn. Tufted plant of 3–4 inches. Shady rocks by streams on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 53′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

19763. **Salvia campanulata,** Wall. Plant of 3-4 ft. Flowers rosy-purple, yellow at base. Shady pasture on the margins of mixed forests on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 53′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

19765. **Primula dryadifolia,** Franch. Matted plant of 6–10 inches in diameter, scapes 2–3 inches. Flowers soft purplish rose, eye greenish. On ledges of cliffs and screes on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 14,000 ft. July 1921. Tsarong, S.E. Tibet.

19767. **Saussurea trullifolia,** W. W. Sm. Plant of 3–5 inches. Flowers purplish-rose (?) immature. Ledges of cliffs and on screes on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 98° 56′ E. Alt. 14–15,000 ft. July 1921. N.W. Yunnan.

19768. **Betula utilis,** D. Don, var. Shrub or tree of 25-50 ft. In fruit. In mixed thickets and pine forests on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 98° 56′ E. Alt. 12,000 ft. July 1921. N.W. Yunnan.

19770. **Quercus** sp. aff. **glauca,** Thunb. Shrub or tree of 25–50 ft. In fruit. In mixed thickets in side valleys on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 53′ E. Alt. 9,000 ft. July 1921. N.W. Yunnan.

19771. **Meconopsis impedita,** Prain. Plant of 6–12 inches. Flowers nodding, deep maroon-purple, anthers orange. Moist, stony alpine meadows on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 53′ E. Alt. 13–14,000 ft. July 1921. N.W. Yunnan.

19774. **Primula sinolisteri,** Balf. f. Plant of 3–9 inches, in fruit. Dry, shady situations on rocks in side valleys on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 50′ E. Alt. 8–9,000 ft. July 1921. N.W. Yunnan.

19775. **Woodwardia radicans,** Smith. Plant of 2–3½ ft. Shady situations by streams in side valleys on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 50′ E. Alt. 7–8,000 ft. July 1921. N.W. Yunnan.

19776. **Quercus.** Shrub or tree of 20–45 ft. In mixed thickets by streams in side valleys on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 53′ E. Alt. 8,000 ft. July 1921. N.W. Yunnan.

19777. **Asplenium Trichomanes,** Linn. Plant of 3–5 inches. Shady dry rocks in gullies on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 53′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

19778. **Asplenium varians,** Hook. et Grev. Plant of 3–9 inches. Dry, shady, stony banks and on rocks and boulders on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 53′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

19782. **Pyrus Dunnii,** Rehder. Shrub or tree of 20–50 ft. In fruit. Thickets and mixed forests on the Mekong-Salwin divide. Lat. 27° 30′ N. Long 98° 56′ E. Alt. 10–11,000 ft. July 1921. N.W. Yunnan.

19784. **Alangium begoniifolium** (Roxb.), Baill. Shrub of 12–18 ft. In fruit. In open thickets, side valleys on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19786. **Nephrodium Brunonianum,** Hook. Plant of 12–18 inches. Shady damp banks in mixed forest on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 10–11,000 ft. Tsarong, S.E. Tibet.

19787. **Tsuga yunnanensis,** Masters. Tree of 40–80 ft. In mixed forests on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 50′ E. Alt. 9–11,000 ft. July 1921. N.W. Yunnan.

19788. **Picea brachytyla,** Pritzel, forma **latisquamea** Stapf. (2 sheets and bark). Tree of 40–90 ft. Branches drooping, not at right angles with the stem, with tips gracefully pendulous. Foliage dark dull green above, bright glaucous white beneath, young foliage soft bright green. Apices almost spinous. Bark rough, flaky, brown-grey. In mixed and pine forests on the Mekong-Salwin divide, Mekong valley. Lat. 27° 56′ N. Long. 98° 52′ E. Alt. 8–10,000 ft. June 1921. N.W. Yunnan.

19789. **Aralia chinensis,** Linn. Shrub of 10–20 ft. Flowers yellow. In thickets by streams on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

19790. **Meconopsis Prattii,** Prain. Plant of 12–20 inches. Flowers pale to dark purplish-rose, anthers orange-yellow. Margins of alpine thickets and by streams on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 13,000 ft. July 1921. N.W. Yunnan.

19791. **Meconopsis speciosa,** Prain. Plant of 2–2½ ft. Flowers soft turquoise-blue, anthers orange-yellow. Open, bouldery moorland on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19792. **Caryopteris trichosphaera,** W. W. Sm. Shrub of 3–4½ ft. Foliage strongly aromatic. Flowers white or very pale blue. Open, stony scrub-clad slopes on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

19794. **Tsuga yunnanensis,** Masters. Tree of 60–80 ft. In mixed and pine forests on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

[Differs slightly in having larger fruits and foliage.]

19796. **Abies** nov. sp. Symmetrical tree of 50 70 ft. Foliage and bark only. In mixed and conifer forests on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 56′ E. Alt. 8,000 ft. July 1921. N.W. Yunnan.

19800. **Viburnum cylindricum,** Ham. Shrub of 10–20 ft. Flowers creamy-white, anthers purple. Dense thickets in side valleys on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 7–8,000 ft. July 1921. N.W. Yunnan.

19801. **Corylus chinensis,** Franch. Tree of 40–60 ft. In fruit. Mixed thickets and forests in side valleys on the Mekong-Salwin divide. Lat 27° 36′ N. Long. 98° 56′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

19802. **Populus** sp. aff. **lasiocarpa,** Oliv. Tree of 40–50 ft. Foliage only. In mixed forests on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

19803. **Cornus oblonga,** Wall. Shrub of 20–25 ft. In fruit. Thickets in side valleys on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 8–9,000 ft. July 1921. N.W. Yunnan.

19804. **Buddleia myriantha,** Diels. Shrub of 6–12 ft. Flowers dull rose, hispid-white exterior, fragrant. In open thickets by streams on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 8–9,000 ft July 1921. N.W. Yunnan.

19805. **Morus alba**, Linn. Shrub or tree of 20–60 ft. Foliage only. In thickets in side valleys on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 8–9,000 ft. July 1921. N.W. Yunnan.

19806. **Pseudotsuga Forrestii**, Craib. Shrub or tree of 20–50 ft. In mixed and conifer forests on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 8–9,000 ft. July 1921. N.W. Yunnan.

19807. **Vaccinium** sp. aff. **fragile**, Franch. Shrub of 2–3 ft. Flowers pale rose, lined a shade darker. In dry shady pine forests on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 9,000 ft. July 1921 N.W. Yunnan.

19808. **Ilex corallina**, Franch. Shrub of 20 ft. In immature fruit. In thickets and open mixed forests on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 10–11,000 ft. July 1921. N.W. Yunnan.

19811. **Meconopsis Prattii**, Prain. Plant of 7–9 inches. Flowers deep blue, anthers yellow. Stony, barren pasture on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19812. **Eriophyton Wallichianum**, Benth. Plant of 3–6 inches. Flowers pale rose. On dry alpine meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,500 ft. July 1921. N.W. Yunnan.

19813. **Lilium Davidi**, Franch. Plant of 2½–3 ft. Flowers orange-scarlet, spotted deep purple. Dry shady situations on the margins of thickets on the mountains N. E. of Atuntze. Lat. 28° 35′ N. Long. 98° 56′ E Alt. 11,000 ft. July 1921. N.W. Yunnan.

19816. **Gentiana phyllocalyx**, C. B. Clarke, vel aff. Plant of 2–5 inches. Flowers clear soft blue, lined dark greenish blue exterior. Open, moist alpine meadows on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 98° 56′ E. Alt. 14–14,500 ft. July 1921. N.W. Yunnan.

19817. **Ilex dipyrena,** Wall. var. **paucispinosa,** Loes. Spinous-leaved shrub of 12–25 ft. In fruit. Open thickets and on rocky slopes on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 98° 56′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

19818. **Lilium Duchartrei,** Franch. Plant of 1–4½ ft. Flowers fragrant, white, flushed exterior more or less purplish-rose, with lower half interior spotted and marked deep purplish-crimson. Shady, rocky slopes in mixed forest on the Mekong-Salwin divide. Lat. 27° 54′ N. Long. 98° 56′ E. Alt. 8–9,000 ft. July 1921. N.W. Yunnan.

19820. **Allium monadelphum,** Turcz. var. Plant of 6–12 ins. Flowers deep rose crimson, yellowish at base. Open, stony pasture on ledges of cliffs and on screes on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,500 ft July 1921. N.W. Yunnan.

19821. **Primula sinoplantaginea,** Balf. f Plant of 6–12 inches. Flowers fragrant, deep soft purple. Open, stony, moist meadows and by streams on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

19824. **Primula Agleniana,** Balf. f. et Forrest. Plant of 10–14 inches. Flowers fragrant, soft primrose-yellow, *not* drying green (!). Open, moist situations on lush meadows on the Mekong-Salwin divide. Lat. 27° 35′ N. Long. 98° 55′ E. Alt. 12–13,000 ft. June 1921. N.W. Yunnan.

19826. **Phalaenopsis Wilsoni,** Rolfe. Epiphytic plant of 12–14 inches. Flowers fragrant, white, faintly flushed magenta exterior, with labellum deep magenta-rose, marked orange at base. On trees in the Mekong valley. Lat. 27° 30′ N. Long. 98° 57′ E. Alt. 7,000 ft. July 1921. N.W. Yunnan.

19829. **Polypodium** sp. aff. **propinquum,** Wall. Plant of 20–24 inches. In shady mixed forests on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 9–10,000 ft. July 1921. Tsarong, S.E. Tibet.

19830. **Cremanthodium nanum,** Dcne. Plant of 1–3 inches. Flowers rich deep orange-yellow, fragrant. Open, stony pasture and on limestone screes on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 15–16,000 ft. July 1921. N.W. Yunnan.

19831. **Pseudotsuga Forrestii,** Craib. Shrub or tree of 30–60 ft. In mixed forests on the mountains east of Atuntze. Lat. 28° 40′ N. Long. 99° 10′ E. Alt. 10–11,000 ft. July 1921. N.W. Yunnan.

19832. **Nomocharis Souliei,** W. W. Sm. et W. E. Evans. Plant of 9–14 inches. Flowers nodding, fragrant, deep crimson-maroon. Open, moist meadows on the margins of scrub on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 13,000 ft. July 1921. Tsarong, S.E. Tibet.

19833. **Nomocharis saluenensis,** Balf. f. Plant of 16–24 inches. Flowers white, flushed purplish-rose exterior, interior base marked crimson. Open lush meadows on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 12–13,000 ft. July 1921. N.W. Yunnan.

19834. **Davallia affinis,** Hook. Plant of 2 ft. On trees and dry banks and rocks in shady mixed forests on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19836. **Juniperus Wallichiana,** Hook. f. var. **meionocarpa,** Hand.-Mzt. Shrub or tree of 20–40 ft. Open situations in side valleys on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 11–12,000 ft. July 1921. N.W. Yunnan.

19838. **Polypodium amœnum,** Wall. Plant of 10–16 inches. On trees and moss-covered boulders in shady forests on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 9–10,000 ft. July 1921. Tsarong, S.E. Tibet.

19839. **Nephrodium Filix-mas,** Rich. var. Plant of 20–30 inches. Shady rocky situations in side valleys on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 9,000 ft. July 1921. Tsarong, S.E. Tibet.

19840. **Myrsine semiserrata,** Wall. Shrub of 6–10 ft. Flowers olive-green (?). In immature fruit. In thickets in side valleys on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 9,000 ft. July 1921. Tsarong, S.E. Tibet.

19841. **Polypodium Lingua,** Sw. Plant of 12–20 inches. On humus-covered boulders and on trees in dry, shady situations on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 8–9,000 ft. July 1921. Tsarong, S.E. Tibet.

19842. **Polypodium lineare,** Thunb. var. **loriforme** (Wall.), Takeda. Plant of 7–10 inches. On humus-covered boulders in dry, shady situations on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 9,000 ft. July 1921. Tsarong, S.E. Tibet.

19843. **Vaccinium moupinense,** Franch. Shrub of 2–2½ ft. Flowers pure white. On ledges of cliffs and humus-covered boulders on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

19845. **Polypodium.** Plant of 9–14 inches. On trees and moss-covered rocks in shady mixed forests on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19846. **Nomocharis lophophora,** Balf. f., var. **Wardii,** W. W. Sm. et W. E. Evans. Plant of 4–7 inches. Flowers pale yellow. Open grassy slopes on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 12,000 ft. July 1921. N.W. Yunnan.

19848. **Sedum robustum,** Praeger. Plant of 12–16 inches. Flowers pale greenish-yellow. Ledges and crevices of limestone cliffs on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 14–15,000 ft. July 1921. N.W. Yunnan.

19849. **Primula ingens,** W. W. Sm. et Forrest. Plant of 12–20 inches. Flowers fragrant, soft purple-blue, with grey eye. Open, stony meadows by streams on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. June 1921. N.W. Yunnan.

19850. **Oreocharis Delavayi,** Franch. vel aff. Plant of 6–8 inches. Flowers orange-yellow. On trees and rocks in dry shady gullies on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19851. **Lysionotus Forrestii,** W. W. Sm. Half-shrubby plant of 2 ft. Flowers rosy-purple, tube base yellowish. Epiphytic on trees in shady mixed forest on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 8-9,000 ft. July 1921. N.W. Yunnan.

19852. **Gastrodia elata,** Blume. Plant of 3–4 ft. fully. Flowers fleshy, dull yellowish-brown, margined green. In shady forests on the Mekong-Salwin divide. Lat. 27° 56′ N. Long. 98° 53′ E. Alt. 8–9,000 ft. June 1921. N.W. Yunnan.

19853. **Lilium Davidi,** Franch. Plant of 1–4 ft. Flowers orange-red with purple spots. Open situations on the margins of thickets and on rocky slopes on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

19854. **Tilia chinensis,** Maxim. var. Tree of 40–70 ft. Flowers fragrant, creamy-yellow. In open mixed forests on the mountains N. of Atuntze. Lat. 28° 36′ N. Long. 99° 10′ E. Alt. 11–12,000 ft. July 1921. N.W. Yunnan.

19855. **Pedicularis.** Plant of 1-4 inches. Flowers rose, beak dark crimson. Moist stony meadows on the mountains N.E. of Atuntze. Lat. 28° 36′ N. Long. 99° 10′ E. Alt. 12,000 ft. July 1921. N.W. Yunnan.

19856. **Acer cappadocicum,** Gleditsch, var. **sinicum,** Rehder, vel aff. Tree of 50–70 ft. Foliage only (!). In mixed forests on the mountains N.E. of Atuntze. Lat. 28° 40′ N. Long. 99° 10′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

19857. **Corylopsis platypetala,** Rehd. et Wils. Shrub of 6–9 ft. In fruit. Open thickets by streams on the mountains N.E. of Atuntze. Lat. 28° 40′ N. Long. 99° 10′ E. Alt. 10–11,000 ft. July 1921. N.W. Yunnan.

19858. **Damnacanthus indicus,** Gaertn. f. Spinous shrub of 2-3 ft. In fruit, fruits dull crimson. Dry rocky scrub-clad slopes on the Salwin-Kiu Chiang divide. Lat. 28° 15′ N. Long. 98° 27′ E. Alt. 10,000 ft. July 1921. Tsarong, S.E. Tibet.

19859. **Campanula** sp. aff. **xylopoda,** J. F. Jeff. Half shrubby plant of 6–10 inches. Flowers pale blue. On screes and ledges of limestone cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 15′ N. Long. 98° 27′ E. Alt. 11,000 ft. July 1921. Tsarong, S.E. Tibet.

19860. **Pieris ovalifolia,** D. Don. Shrub of 4–8 ft. Flowers waxy-white, fragrant. Dry situations in thickets and forests on the Salwin-Kiu Chiang divide. Lat. 28° 15′ N. Long. 98° 27′ E. Alt. 11,000 ft. July 1921. Tsarong, S.E. Tibet.

19861. **Anisadenia pubescens,** Griff. Shrubby plant of 1–2 ft. Flowers creamy-white, base shaded rose. Dry situations amongst scrub and on the margins of thickets on the Salwin-Kiu Chiang divide. Lat. 28° 15′ N. Long. 98° 27′ E. Alt. 11,000 ft. July 1921. Tsarong, S.E. Tibet.

19862. **Davidia involucrata,** Baill. Tree of 50–90 ft. In fruit. In open mixed forests on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 11,000 ft. July 1921. Tsarong, S.E. Tibet.

19863. **Corylus ferox,** Wall. var. **thibetica,** Franch. Shrub of 12–24 ft. In fruit. Open thickets on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 11,000 ft. July 1921. Tsarong, S.E. Tibet.

19864. **Rubus Hookeri,** Focke. Spinous trailing shrub of 6–7 ft. Flowers (?). In fruit. Amongst scrub and rocks in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 10–11,000 ft. July 1921. Tsarong, S.E. Tibet.

19865. **Gaultheria prostrata,** W. W. Sm. Dwarf shrub of 2–4 inches. Flowers white flushed rose, or rose. Moist, rocky moorland on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 13–14,000 ft. July 1921. Tsarong, S.E. Tibet.

19867. **Gaultheria nummularioides,** D. Don, var. Prostrate creeping shrub of many inches. Flowers bright crimson-rose, fruits (?) probably blue (!). On humus-covered boulders, and stony moorland, forming extensive mats on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14–14,500 ft. July 1921. Tsarong, S.E. Tibet.

19868. **Primula eucyclia,** W. W. Sm. et Forrest. Plant of 1–2½ inches. Flowers (?). In fruit. Open alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14,000 ft. July 1921. Tsarong, S.E. Tibet.

[Seed procured Sept. See in flower No. 21632, 1922.]

19870. **Mallotus nepalensis,** Muell.-Arg. Shrub of 20–25 ft. In fruit. Amongst open scrub in dry situations on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 28′ E. Alt. 6,000 ft. July 1921. Tsarong, S.E. Tibet.

19873. **Myricaria laxa,** W. W. Sm. Shrub of 2–3 ft. Flowers rose. Open limy meadows on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 10,000 ft. July 1921. Tsarong, S.E. Tibet.

19874. **Pyrus** sp. aff. **Harrowianus,** Balf. f. et W. W. Sm. Shrub of 9–18 ft. Flowers (?) probably creamy-white. In open thickets and on rocky slopes on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 11–12,000 ft. July 1921. Tsarong, S.E. Tibet.

19875. **Cotoneaster rubens,** W. W. Sm. Semi-prostrate shrub of 1–2 ft. In fruit, fruits red (!). On humus-covered boulders and stony clayey pasture on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 12,000 ft. July 1921. Tsarong, S.E. Tibet.

19876. **Nothoclaena Marantae,** R. Br. Plant of 10–14 inches. In shady thickets and amongst scrub on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 10–11,000 ft. July 1921. Tsarong, S.E. Tibet.

19877. **Cladonia.** On limestone rocks and cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14,000 ft. July 1921. Tsarong, S.E. Tibet.

19878. **Cladonia** sp. aff. **rangiferina** (Linn.), Web. On rocks and barren stony meadows on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14–15,000 ft. July 1921. Tsarong, S.E. Tibet.

19879. **Alectoria** sp.? On limestone rocks and cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14–15,000 ft. July 1921. Tsarong, S.E. Tibet.

19880. **Saxifraga Wardii,** W. W. Sm. Tufted plant of 1½-2 inches. Flowers bright yellow, calyces ruddy. Stony alpine meadows and on rocks on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14,000 ft. July 1921. Tsarong, S.E. Tibet.

19881. **Juncus.** Plant of 1-2 inches. Flowers creamy-yellow, flushed rosy-purple. Open moist pasture on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14-15,000 ft. July 1921. Tsarong, S.E. Tibet.

19882. **Saxifraga nigroglandulosa,** Engl. et Irmsch. Matted plant of 2-3 inches. Flowers orange-yellow. Moist stony alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14-15,000 ft. July 1921. Tsarong, S.E. Tibet.

19883. **Anemone obtusiloba,** D. Don, var. Plant of 4-7 inches. Flowers deep indigo-purple. Open alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14,000 ft. July 1921. Tsarong, S.E. Tibet.

19884. **Primula flexilipes,** Balf. f. et Forrest. Plant of 12-16 inches. Flowers soft yellow, fragrant. Open marshy meadows on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 13,000 ft. July 1921. Tsarong, S.E. Tibet.

19885. **Cremanthodium rhodocephalum,** Diels. Plant of 5-8 inches. Flowers deep ruddy purple. Stony pasture and on screes on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 15,000 ft. July 1921. Tsarong, S.E. Tibet.

19886. **Primula Dickieana,** Watt, var. **Pantlingii** (King). Plant of 2-3 inches. Flowers purple-blue, throat and tube yellow. Moist alpine pasture on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14-14,500 ft. July 1921. Tsarong, S.E. Tibet.

19887. **Euphrasia officinalis,** Linn. Plant of 3½-5 inches. Flowers creamy-white, faintly flushed purple. Open, stony meadows on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 15,000 ft. July 1921. Tsarong, S.E. Tibet.

19888. **Gaultheria suborbicularis,** W. W. Sm. Mat shrub of many inches. Flowers (?) probably rose. Resembles No. 19867 but smaller in all parts. Open moorland on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 15,000 ft. July 1921. Tsarong, S.E. Tibet.

19889. **Geranium Pylzowianum,** Maxim. Tuberous-rooted plant of 4–9 inches. Flowers bright rose-geranium. Dry, stony alpine meadows and on ledges of cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14,000 ft. July 1921. Tsarong, S.E. Tibet.

19890. **Cremanthodium Decaisnei,** Clarke. Plant of 4–8 inches. Flowers sweetly fragrant, ray florets deep golden-yellow, disc florets dull greenish-orange. Stony, moist alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 15,000 ft. July 1921. Tsarong, S.E. Tibet.

19891. **Leontopodium himalayanum,** DC. Matted plant of 1 inch. Flowers silvery-grey. Rocky slopes and alpine cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 15,500–16,000 ft. July 1921. Tsarong, S.E. Tibet.

19892. **Saxifraga melanocentra,** Franch. Plant of 4–7 inches. Flowers creamy-white, base petals dull orange. Stony alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14–15,000 ft. July 1921. Tsarong, S.E. Tibet.

19893. **Cremanthodium comptum,** W. W. Sm. Plant of 3–5 inches. Phyllaries grey-brown, velvety. Flowers fragrant, ray florets bright orange-yellow, disc florets dull orange. Stony alpine moorland and on limestone screes on the mountains N.E. of Atuntze. Lat. 28° 40′ N. Long. 99° 10′ E. Alt. 15,000 ft. July 1921. N.W. Yunnan.

19894. **Omphalodes** sp. aff. **Forrestii,** Diels. Plant of 1½–2½ ft. Flowers dull purplish-blue. Margins of forests and thickets on the Salwin-Kiu Chiang divide. Lat. 28° 40′ N. Long. 99° 10′ E. Alt. 12–13,000 ft. July 1921. Tsarong, S.E. Tibet.

19895. **Chrysanthemum jugorum,** W. W. Sm. Plant of 4–10 inches. Ray florets deep dull brick-crimson exterior, interior orange-red, disc florets ruddy orange. Limy stony pasture on the mountains N.E. of Atuntze. Lat. 28° 40′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. July 1921. N.W. Yunnan.

19897. **Salix flabellaris,** Anderss. Prostrate shrub forming mats of 1–2 ft. Open, stony moorland on the mountains N E. of Atuntze. Lat. 28° 40′ N. Long. 99° 10′ E. Alt. 15,000 ft. July 1921. N.W. Yunnan.

19898. **Arenaria lichiangensis,** W. W. Sm. Dense cushion plant, 1–2 ft. in diameter. Flowers white. Moist, peaty, stony moorland, on the mountains N.E. of Atuntze. Lat. 28° 40′ N. Long. 99° 10′ E. Alt. 16,000 ft. July 1921. N.W. Yunnan.

19899. **Sageretia theezans,** Brongn. forma. Spinous shrub of 3–6 ft. Flowers olive-yellow. Dry open hillsides in the Mekong valley. Lat. 28° 30′ N. Long. 98° 54′ E. Alt. 8–9,000 ft. Aug. 1921. N.W. Yunnan.

19901. **Aster Delavayi,** Franch. Plant of 20 inches. Ray florets light purple-blue, disc florets dull olive-yellow. Open alpine pasture on the mountains N.E. of Atuntze. Lat. 28° 40′ N. Long. 99° 10′ E. Alt. 14,000 ft. Aug. 1921. N.W. Yunnan.

19903. **Diplarche multiflora,** Hook. f. et Thoms. Shrub of 4–8 inches. Flowers pale rose-pink. Open, stony moorland and on cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14 15,000 ft. July 1921. Tsarong, S.E. Tibet.

19904. **Ilex micrococca,** Maxim. Shrub of 12–16 ft. In fruit. In thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 9–10,000 ft. July 1921. Tsarong, S.E. Tibet.

19905. **Alangium begoniifolium** (Roxb.), Baill. Shrub of 25–40 ft. Flowers golden-yellow. Open thickets in mixed forests in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 99° 27′ E. Alt. 9–10,000 ft. July 1921. Tsarong, S.E. Tibet.

19906. **Lactuca longifolia,** DC. Plant of 4–7 ft. Flowers pale lavender-blue. Margins of scrub and thickets by streams on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 7–8,000 ft. July 1921. Tsarong, S.E. Tibet.

19907. **Hydrocotyle javanica,** Thunb. Semi-trailing plant of 12–20 inches. In fruit. Lush pasture on the margins of streams on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 10–11,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19908. **Polygonum Forrestii,** Diels. Creeping plant forming mats of 1 ft. or so in breadth, flower stems 1–2 inches. Flowers creamy-white. Open stony moorland on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14–14,500 ft. Aug. 1921. Tsarong, S.E. Tibet.

19909. **Ardisia crispa,** DC. Undershrub of 3–5 ft. Flowers white, fruits crimson. In mixed and pine forests on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 7–9,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19923. **Pedicularis.** Plant of 6–9 inches. Flowers orange-yellow. Open marshy moorland on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14–15,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19927. **Populus szechuanica,** Schneid. Tree of 50–70 ft. In fruit. In mixed forests on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 11–12,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19928. **Carex atrata,** Linn. var. Plant of 14–20 inches. Open marshy meadows on the Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 11,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19929. **Oxalis leucolepis,** Diels. Plant of 2–3 inches. Flowers white stained and lined rosy-purple at base. Shady forests and thickets on the Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 11–12,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19931. **Prunus.** Tree of 40–50 ft. In fruit, fruits light crimson. In open mixed forests on Doker-la, Mekong-Salwin divide. Lat. 28° 40′ N. Long. 98° 42′ E. Alt. 12,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19932. **Vaccinium modestum,** W. W. Sm. Shrub of 1–3 inches. Flowers dull rose-crimson. Moist humus-covered rocks and stony meadows on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 14,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19933. **Moss** (infertile). On moist rocks and cliffs by streams in shady, side valleys on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 11–12,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19934. **Mnium.** On damp rocks and cliffs by streams in shady side valleys on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 12,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19935. **Hypnum.** On trees in shady damp mixed forest on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 11,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19936. **Prunus.** Shrub or tree of 20–45 ft. In fruit, fruits crimson. Open mixed thickets and forests on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 12,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19937. **Hymenophyllum polyanthos,** Sw. Plant of 1–2½ inches. Forming dense mats on banks and trees in shady mixed forests on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 10–11,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19938. **Diplarche multiflora,** Hook. f. et Thoms. Dwarf shrub of 6–9 inches. Flowers white. On rocks and open stony meadows on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 14,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19939. **Saxifraga pallida,** Wall. var. **typica,** Engl. et Irmsch. f. **foliosa,** E. et I. et f. **corymbiflora,** E. et I. Plant of 6–10 inches. Flowers white, flecked pale orange at base. Moist, stony meadows and slopes on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 12–13,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19940. **Saxifraga melanocentra**, Franch. Plant of 3–7 inches. Flowers variable; pure white, white with orange at base, or white with most of the centre of each petal stained orange-crimson. On humus-covered boulders and ledges of cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

[May be more than one species here.]

19941. **Campanula aristata,** Wall. Plant of 6–10 inches. Flowers deep purple-blue. On stony meadows and ledges of cliffs on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 12–13,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19942. **Triplostegia glandulifera,** Wall. Plant of 6–12 inches. Flowers white, tipped and stained more or less deeply rose. Open, stony meadows on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 10–11,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19943 **Adiantum pedatum,** Linn. Plant of 9–18 ins. Moist rocks and banks in shady mixed forests on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 9–10,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19944. **Athyrium.** Plant of 14–18 inches. Amongst undergrowth in shady mixed forests on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 9–10,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19945. **Hypnum crista-castrensis,** Linn. Mat plant many feet in extent. Very moist shady situations amongst rocks in pine forests on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 12–13,000 ft. Aug. 1921, Tsarong, S.E. Tibet.

19946. **Dicranum scoparium,** Hedw. Mat plant many feet in extent. On trunks of trees and boulders in mixed forests on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 10–11,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19947. **Betula utilis,** D. Don, var. Tree of 40–50 ft. In fruit. Open mixed forests on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 11–12,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19948. **Geranium Donianum,** Sweet. Woody rooted plant of 4–8 inches. Flowers bright geranium-rose, very deep shade in bud. Open stony alpine meadows on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 13,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19949. **Aster.** Plant of 4–9 inches. Ray florets deep purple-rose, disc florets dull olive-yellow. On stony meadows on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 14,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19950. **Vaccinium oreotrephes,** W. W. Sm. Shrub of 1–2 ft. In fruit, fruits black-purple. Moist, stony meadows and on and amongst rocks on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 14,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19951. **Corylus chinensis,** Franch. Tree of 40–50 ft. In fruit. In open mixed forests on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 10–11,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19953. **Lindsaya cultrata,** Sw. forma. Matted plant of 2–3 ins. On humus-covered boulders and on cliffs in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 12–13,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19957. **Lycopodium.** Plant of 3–6 inches. Flowers greyish-white. On ledges of moist cliffs and stony, moist pasture at base thereof on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 11,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19962. **Polypodium Veitchii,** Baker. Plant of 3–9 inches. Shady rocks by streams and on forest trees in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 10,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19963. **Senecio retusus,** Wall. Plant of 2–3 ft. Ray florets dull orange, disc florets greenish-orange, fragrant. Open rocky meadows on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 12,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19964. **Aster yunnanensis**, Franch. Plant of 18–24 inches. Ray florets purplish-blue, disc florets greenish-yellow. Open rocky meadows on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 12,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19965. **Pedicularis.** Plant of 9–18 inches. Flowers deep rosy-purple, lip lightest. Ledges of limestone cliffs and stony slopes on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 27′ E. Alt. 13,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19966. **Picea brachytyla,** Pritzel. Tree of 30–70 ft. In mixed and pine forests on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 9–10,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19967. **Taxus cuspidata,** Sieb. et Zucc. var. **chinensis,** Rehd. et Wils. Shrub of 25–40 ft. In mixed forests on Doker-la, Mekong-Salween divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 11,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19968. **Tsuga** sp. Shrub or tree of 25–60 ft. Open mixed forest on Doker-la, Mekong Salwin divide. Lat. 28° 40′ N. Long. 98° 40′ E. Alt. 9–11,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19969. **Prunus.** Tree of 30–50 ft. In fruit, fruits black. Open mixed forest on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 9–10,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19970. **Fern.** Plant of 2–3 ft. Shady situations in mixed forests on Doker-la, Mekong-Salween divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 8–10,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19971. **Lindera** sp. vel **Litsea** sp. Shrub or tree of 20–40 ft. In fruit, fruits black (?). Thickets and forests on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 7–9,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19972. **Ribes acuminatum,** Wall. Shrub of 6–10 ft. In immature fruit. Amongst scrub in side valleys on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 10,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19973. **Acer caudatum,** Wall. var. Shrub or tree of 30–50 ft. In fruit. Open mixed forests in side valleys on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 8–10,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19974. **Adiantum venustum,** Don. Massed plant of 4–10 inches. On shady rocks and cliffs in side valleys on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 9–11,000 ft. Aug. 1921. Tsarong, S. E. Tibet.

19975. **Primula Dickieana,** Watt, var. **Pantlingii** (King). Plant of 2–3 inches. In fruit. On moist pasture by streams on the Salwin-Kiu Chiang divide. Lat. 28° 12′ N. Long. 98° 24′ E. Alt. 14–15,000 ft. July 1921. Tsarong, S.E. Tibet.

19976. **Cremanthodium oblongatum,** Clarke, var. Plant of 4–6 inches. Flowers fragrant. Ray florets golden yellow, disc florets greenish-orange. Stony, alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 12′ N. Long. 98° 24′ E. Alt. 14,000 ft. July 1921. Tsarong, S.E. Tibet.

19979. **Omphalogramma elegans,** G. Forrest. Plant of 8–10 inches. Flowers deep purple-blue, tube yellowish.. Alpine pasture on the margins of scrub and peaty bogs on the Salwin-Kiu Chiang divide. Lat. 28° 12′ N. Long. 98° 24′ E. Alt. 14,000 ft. July 1921. Tsarong, S.E. Tibet.

19980. **Illicium yunnanense,** Franch. Shrub or tree of 20–45 ft. Foliage aromatic. In fruit. Open situations in thickets in the Salwin valley, Salwin-Kiu Chiang divide. Lat. 28° 12′ N. Long. 98° 30′ E. Alt. 6–7,000 ft. July 1921. N.W. Yunnan.

19981. **Lysionotus** sp. aff. **gracilis,** W. W. Sm. Epiphytic plant of 6–8 inches. Flowers pale lilac with darker markings, base yellowish. In shady side valleys on trees and boulders on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 8,000 ft. July 1921. Tsarong, S.E. Tibet.

19984. **Malus Prattii,** Schneider. Shrub or tree of 25–45 ft. In fruit. Open mixed thickets and forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14–15,000 ft. July 1921. Tsarong, S.E. Tibet.

19985. **Magnolia rostrata,** W. W. Sm. Tree of 40–50 ft. In fruit. Open mixed forest on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 9–11,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

19986. **Corydalis Delavayi,** Franch. var. Plant of 6–10 inches. Flowers yellow tipped deep purple. Open stony meadows on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 12–13,000 ft. Aug. 1921. N.W. Yunnan.

19987. **Aconitum tatsiense,** Finet et Gagnep. Plant of 12–18 inches. Flowers very deep purple. Open alpine meadows and on ledges of cliffs on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 14,500 ft. Aug. 1921. N.W. Yunnan.

19988. **Lychnis nigrescens,** Edgew. Plant of 4 6 inches. Flowers tipped dull rosy-purple. Open stony pasture and on screes on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 13–14,000 ft. Aug. 1922. N.W. Yunnan.

19989. **Cremanthodium Decaisnei,** Clarke. Plant of 8–10 inches. Flowers fragrant. Ray florets orange, disc florets dull greenish-orange. Open screes on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 14,000 ft. Aug. 1921. N.W. Yunnan.

19995. **Orchis spathulata,** Reichb. f. Plant of 1½–2 inches. Flowers purple-rose. Alpine meadows on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 13,000 ft. Aug. 1921. N.W. Yunnan.

19996. **Amitostigma tibeticum,** Schltr. Plant of 1½–2 inches. Flowers deep rose-purple. Moist alpine meadows on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 12–13,000 ft. Aug. 1921. N.W. Yunnan.

19997. **Cheilanthes subvillosa,** Hook. vel aff. Plant of 6–8 inches. Dry rocks and cliffs on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 7–9,000 ft. Aug. 1921. N.W. Yunnan.

19998. **Gentiana Wardii,** W. W. Sm. Matted plant of 1 inch. Flowers deep blue. Open, moist, peaty moorland on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 14,000 ft. Aug. 1921. N.W. Yunnan.

19999. **Aconitum tatsiense,** Finet et Gagnep. Plant of 12–16 inches. Flowers deep indigo. Open alpine meadows on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 14,000 ft. Aug. 1921. N.W. Yunnan.

20000. **Primula Valentiniana,** Hand.-Mzt. Plant of 2–3 inches. Flowers fleshy, deep wine-crimson, identical in shade to the darker forms of *P. secundiflora.* On open peaty alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 12′ N. Long. 98° 24′ E. Alt. 15–15,500 ft. July 1921. Tsarong, S.E. Tibet.

20001. **Pedicularis.** Plant of 6–12 inches. Flowers deep purplish-rose. Open, stony meadows and screes on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 13,000 ft. Aug. 1921. N. W. Yunnan.

20002. **Aconitum rotundifolium,** Kar. et Kir. var. **tanguticum,** Maxim. Plant of 4–6 inches. Flowers fragrant, deep blue. Open, stony meadows and ledges of cliffs on the Londre pass, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 14,500 ft. Aug. 1921. N. W. Yunnan.

20004. **Jasminum nudiflorum,** Lindl. Stunted shrub of 1–2 ft. Flowers bright yellow. Forming cushions on ledges of dry cliffs and rocky slopes in the Atuntze valley. Lat. 28° 32′ N. Long. 98° 48° E. Alt. 9–10,000 ft. Aug. 1921. N.W. Yunnan.

20006. **Lonicera litangensis,** Batal. Shrub of 3–4 ft. In fruit, fruits scarlet. Open, rocky slopes and amongst scrub in dry situations on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 12–13,000 ft. Aug. 1921. N.W. Yunnan.

20009. **Acer Forrestii,** Diels. Shrub or tree of 20–45 ft. In fruit. In mixed thickets and forests on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 9–10,000 ft. Aug. 1921. N.W. Yunnan.

20010. **Chrysanthemum jugorum,** W. W. Sm. var. **tanacetopsis,** W. W. Sm. Aromatic plant of 4–6 inches. Flowers deep orange, tipped crimson. Dry, stony meadows on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 13–14,000 ft. Aug. 1921. N. W. Yunnan.

20011. **Cremanthodium Forrestii,** J. F. Jeff. Plant of 6–10 inches. Flowers fragrant. Ray florets orange-yellow, disc florets greenish-yellow. Open stony meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20012. **Meconopsis impedita,** Prain. Plant of 6–14 inches. Flowers deep rosy wine-purple. Moist, stony meadows on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 13–14,000 ft. Aug. 1921. N.W. Yunnan.

20016. **Juniperus squamata,** Hamilton. Shrub or tree of 20–40 ft. Mixed thickets and forests in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 24′ E. Alt. 9,000 ft. July 1921. Tsarong, S.E. Tibet.

20017. **Pteris longifolia,** Linn. Plant of 16–24 inches. Shady dry situations amongst boulders in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 24′ E. Alt. 7–8,000 ft. Aug. 1921. Tsarong, S.E. Tibet..

20018. **Polytrichum.** Forming cushions of some extent in damp shady situations in mixed forest on the Salwin-Kiu Chiang divide. Lat. 28° 20′ N. Long. 98° 24′ E. Alt. 7–8,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20022. **Lysionotus Forrestii,** W. W. Sm. Epiphytic, semi-shrubby plant of 2 ft. Flowers deep purple, shaded to yellowish white at base. On ledges of cliffs and humus-covered boulders in shady side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 8,000 ft. Aug. 1921. Tsarong, S. E. Tibet.

20024. **Saussurea.** Plant of 1–1½ inches. Flowers ruddy-purple. Moist, stony open moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20030. **Picea brachytyla,** Pritzel. Tree of 30–70 ft. In mixed pine and deciduous forest on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 7–9,000 ft. Aug. 1921. N.W. Yunnan.

20031. **Aster likiangensis,** Franch. Plant of 2–5 inches. Ray florets deep ruddy wine purple, disc florets ruddy greenish-orange. Open alpine meadows on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 13–14,000 ft. Aug. 1921. N.W. Yunnan.

20032. **Meconopsis eximia,** Prain. Plant of 6–10 inches. Flowers pale ruddy purple, anthers grey-yellow. Open, stony, moist pasture on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,000 ft. Aug. 1921. N.W. Yunnan.

20033. **Crepis Gillii,** S. Moore. Plant of 1 inch. Florets orange-yellow, pappus steel grey! Screes and open, moist, stony pasture on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,500 ft. Aug. 1921. N.W. Yunnan.

20035. **Nomocharis saluenensis,** Balf. f. Plant of 12–26 ins. Flowers pure white, very faintly washed crimson interior base. Open alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13–14,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20036. **Arenaria roseiflora,** Sprague. Plant of 6–8 inches. Flowers transparent soft shell-pink. Open, moist, limy meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12–13,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20038. **Arenaria Delavayi,** Franch. Plant of 6–8 inches. Flowers white, faintly flushed pink exterior. Damp gritty soil on alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12–13,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20040. **Gaultheria trichophylla,** Royle, var. Prostrate or semi-prostrate shrub of a few inches. In fruit, fruits blue. Moist alpine pasture on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20042. **Acer caesium,** Wall. var. Tree of 40–50 ft. In fruit. In mixed forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20043. **Cheilanthes** sp? Plant of 5–8 inches. Dry, shady limestone cliffs in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20044. **Polytrichum** sp. aff. **commune,** Linn. Forming cushions on damp shady rocks and banks in mixed forests on the Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 10,000 ft. Aug. 1921. N.W. Yunnan.

20045. **Berneuxia thibetica,** Decne. Plant of 9–12 inches. In fruit. Ledges of shady cliffs in conifer forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11,000 ft. Aug. 1921. Tsarong, S. E. Tibet.

20046. **Impatiens Delavayi,** Franch. vel aff. Plant of 2–2½ ft. Flowers black-purple, shaded lighter. Margins of pine forests and scrub in moist pasture on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11–12,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20047. **Omphalogramma minus,** Hand.-Mzt. vel aff. Plant of 2–4 inches. Flowers throughout deep indigo purple. Sheltered situations by streams amongst boulders on the Salwin-Kiu Chiang divide. Lat. 28° 12′ N. Long. 98° 24′ E. Alt. 14–14,500 ft. July 1921. Tsarong, S.E. Tibet.

[F. No. 20846 in fruit.]

20048. **Nomocharis saluenensis,** Balf. f. Plant of 20–24 inches. Flowers pale yellow, minutely speckled maroon on interior base. By streams amongst heavy grass in shady situations on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12–13,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20049. **Larix Potanini,** Batalin. Tree of 40–70 ft. In conifer forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20050. **Magnolia tsarongensis,** W. W. Sm. et Forrest. Tree of 6–10 ft., constantly branched from base. In fruit. In open mixed forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20051. **Nomocharis meleagrina,** Franch. Open alpine pasture on the margins of forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20054. **Porotrichum** sp? Forming mats on banks and shady rocks in side valleys on the Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 9–10,000 ft. Aug. 1921. N.W. Yunnan.

20056. **Polypodium lineare,** Thunb. var. **Thunbergianum,** Takeda. Plant of 1–3 inches. On dry shaded humus-clad boulders in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20059. **Crepis Gillii,** S. Moore. Plant of 1 inch. Flowers (?) yellow (!). Open screes and stony pasture on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. Aug. 1921. N.W. Yunnan.

20060. **Delphinium Brunonianum,** Royle. Plant of 3–4 inches. Flowers pale washy blue veined a deeper shade. Open alpine meadows and on screes on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 15,000 ft. Aug. 1921. N.W. Yunnan.

20061. **Cremanthodium campanulatum** (Franch.), Diels. Plant of 6–12 inches. Phyllaries deep rosy-purple, flowers deep purple-rose. Open, stony pasture and on screes on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20065. **Aster Delavayi,** Franch. Plant of 2 ft. Ray florets purplish-blue, disc florets green-orange. Open alpine pasture on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20068. **Davallia pseudocystopteris,** Ktze. Plant of 12–20 inches. Shady situations in pine forests on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 12,000 ft. Aug. 1921. N.W. Yunnan.

20069. **Caragana crassicaulis,** Benth. vel aff. Cushion shrub plant of 3–4 inches. In fruit. Open stony moorland on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. Aug. 1921. N.W. Yunnan.

20070. **Meconopsis rudis,** Prain. Plant of 9–12 inches. Flowers deep blue, anthers yellowish-grey. Open stony meadows and on screes and cliffs on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 15,000 ft. Aug. 1921. N.W. Yunnan.

20072. **Saussurea quercifolia,** W. W. Sm. var. Plant of 2–5 inches. Flowers rosy-purple. On screes and stony moorland on the mountains N.E. of Chungtien. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 15,000 ft. Aug. 1921. N.W. Yunnan.

20074. **Aspidium Prescottianum,** Hook. Plant of 12–18 inches. Dry rocky slopes in side valleys on the Mekong-Salwin divide. Lat. 28° 12′ N. Long. 98° 40′ E. Alt. 10–11,000 ft. Aug. 1921. N.W. Yunnan.

20076. **Nomocharis saluenensis,** Balf. f. Plant of 10–16 inches. Flowers white, flushed rose-purple exterior, speckled purple interior base. Openings in and on the margins of mixed forests on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 40′ E. Alt. 10–11,000 ft. Aug. 1921. N.W. Yunnan.

20077. **Primula Agleniana,** Balf f. et Forrest. Plant of 12–16 inches. Flowers fragrant, pale primrose-yellow not drying green. Open moist meadows and shady pasture by streams on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,500 ft. July 1921. Tsarong, S.E. Tibet.

20080. **Manglietia insignis,** Blume, var. Tree of 30–40 ft. In fruit. Mixed forests in sheltered side valleys of the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. July 1921. Tsarong, S.E. Tibet.

20081. **Primula Agleniana,** Balf. f. et Forrest, var. **alba,** Forrest. Plant of 12–16 inches. Flowers white, fragrant, faintly flushed rose exterior. Moist alpine pasture on the margins of cane brakes on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. July 1921. Tsarong, S.E. Tibet.

20082. **Sedum atuntsuense,** Praeger. Semi-cushion plant of 6–12 inches diameter. Flowers bright chrome-yellow. On ledges and in crevices of cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15–16,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20083. **Tanacetum yunnanense,** J. F. Jeff. Aromatic plant of 2½ 3 ft. Flowers dull orange-yellow. Stony alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20086. **Meconopsis speciosa,** Prain. Plant of 1–2 ft. Flowers ruddy purple, anthers orange. Open stony alpine meadows and on screes on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13–14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20087. **Juniperus Wallichiana,** Hook. f. var. **meionocarpa,** Hand.-Mzt. Tree or shrub of 20–35 ft. In conifer forest on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 11,000 ft. Sept. 1921. N.W. Yunnan.

20088. **Crepis Gillii,** S. Moore. Plant of an inch. Flowers bright yellow. Open, stony pasture and screes on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20091. **Saussurea trullifolia,** W. W. Sm. Plant of 2–3 inches. Flowers crimson and purple. On screes and ledges of cliffs on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. Sept. 1921. N.W. Yunnan.

20092. **Aeschynanthus bracteata,** Wall. Epiphytic shrubby plant of 2–2½ ft. Flowers purple and crimson. In shady mixed and pine forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 8,000 ft. July 1921. Tsarong, S.E. Tibet.

20093. **Ilex corallina,** Franch. Shrub of 12–20 ft. In fruit. In mixed thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20096. **Ilex** sp. aff. **dipyrena,** Wall. Spinous leaved shrub of 20 ft. In fruit, fruits red. In thickets and mixed forests on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 10–11,000 ft. Aug. 1921. N. W. Yunnan.

20097. **Aeschynanthus bracteata,** Wall. Epiphytic shrubby plant of 2 ft. Flowers crimson. On trees and rocks in mixed forest on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 7–8,000 ft. July 1921. Tsarong, S.E. Tibet.

20098. **Ribes laurifolium,** Jancz. ♂ Shrub of 6 9 ft. Flowers (?). In thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 8–9,000 ft. Aug. 1921. N.W. Yunnan.

20099. **Aeschynanthus.** Epiphytic shrubby plant of 2–3 ft. Flowers orange-crimson. On trees in dense shady forest on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 6–7,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20100. **Euonymus acanthocarpa,** Franch. Shrub of 6–12 ft. Flowers (?). In fruit. In thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 7–8,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20101. **Ilex dipyrena,** Wall. var. **paucispinosa,** Loes. Shrub of 20–25 ft. In fruit. Open forests and thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20102. **Calanthe arcuata,** Rolfe. Plant of 6–10 inches. Flowers white, flushed deep purple exterior. On humus-covered boulders in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 7–8,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20103. **Picea brachytyla,** Pritzel, forma **latisquamea,** Stapf. Tree of 90–120 ft. In mixed forests on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 40′ E. Alt. 9,000 ft. Aug. 1921. N.W. Yunnan.

[Five ft. diameter 5 ft. from base. The Mother Mary Tree.]

20104. **Polypodium asterolepis,** Baker. Plant of 10–15 inches. On dry cliffs and banks in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 7–9,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20107. **Arisaema.** Plant of 16–20 inches. Spathe yellow, flushed purple at base. Dry stony situations on the margins of thickets on the mountains N.E. of Atuntze. Lat. 28° 30′ N. Long. 99° 10′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

20108. **Polypodium flocculosum,** Don. Plant of 12–15 inches. Dry shady situations in ravines and forests on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 9–10,000 ft. Sept. 1921. N.W. Yunnan.

20109. **Aspidium Prescottianum,** Hook. Plant of 12–18 inches. Dry shady forests on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 10,000 ft. Sept. 1921. N.W. Yunnan.

20110. **Abies Faxoniana,** Rehd. et Wils. Tree of 60–90 ft. In Abies forest on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20112. **Corylus chinensis,** Franch. Tree of 40–60 ft. In fruit. In mixed forests on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 40′ E. Alt. 10–11,000 ft. Sept. 1921. N.W. Yunnan.

20113. **Saussurea trullifolia,** W. W. Sm. Plant of 3–5 inches. Flowers crimson and purple. Limestone screes and cliffs on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 15,000 ft. Sept. 1921. N.W. Yunnan.

20114. **Webera elongata,** Schwaeg. Matted plant of 1 inch. On dry rocks on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13,000 ft. Sept. 1921. N W. Yunnan.

20115. **Pinus sinensis,** Lamb. var. **densata,** Shaw. Tree of 30–60 ft. In fruit. In conifer forests on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 10–11,000 ft. Sept. 1921. N.W. Yunnan.

20116. **Vittaria lineata,** Sw. Matted plant of 8–10 inches. Dry rocks and banks in side valleys on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 10,000 ft. Sept. 1921. N.W. Yunnan.

20117. **Abies Faxoniana,** Rehd. et Wils. Tree of 30–70 ft. In mixed and conifer forest on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 13,000 ft. Sept. 1921. N.W. Yunnan.

20119. **Ceropegia.** Weakly scandent plant of 2–4 ft. Flowers, tube greenish-yellow, striped purple, limb orange, tipped purple. On grass and scrub in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 9–10,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20122. **Lilium Davidi,** Franch. Plant of 2½–3½ ft. Flowers flame orange spotted purple. Margins of thickets and forests on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 10–11,000 ft. Sept. 1921. N.W. Yunnan.

20124. **Aeschynanthus.** Epiphytic pendulous half-shrubby plant of 2–3 ft. Flowers crimson, orange at base. On trees in mixed forest on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 7,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20126. **Abies Faxoniana,** Rehd. et Wils. Tree of 40–70 ft. Forming dense forests on the mountains due north of Atuntze near Adong. Lat. 28° 35′ N. Long. 98° 56′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20127. **Morus** sp. Tree of 40–50 ft. Foliage only. In mixed forest in side valleys on the mountains north of Atuntze, near Adong.. Lat. 28° 35′ N. Long. 98° 56′ E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20128. **Rubia lichiangensis,** Diels. Plant of 4–9 inches. Flowers pale yellow. Dry, stony pasture on the mountains N. of Atuntze, near Adong. Lat. 28° 35′ N. Long. 98° 56′ E. Alt. 9–10,000 ft. Sept. 1921. N.W. Yunnan.

20129. **Pinus sinensis,** Lamb. Tree of 30–70 ft. In pine forests on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 9–10,000 ft. Sept. 1921. N.W. Yunnan.

20130. **Sedum.** Plant of 1½ inches. Flowers orange-yellow. Moist stony pasture on the mountains around Adong. Lat. 28° 35′ N. Long. 98° 56′ E. Alt. 10,000 ft. Sept. 1921. N.W. Yunnan.

20131. **Picea brachytyla,** Pritzel, forma **latisquamea.,** Stapf. Tree of 60–90 ft. In conifer and mixed forests on the mountains around Adong. Lat. 28° 35′ N. Long. 98° 56′ E. Alt. 9–10,000 ft. Sept. 1921. N.W. Yunnan.

20132. **Abies Faxoniana,** Rehd. et Wils. Tree of 50–70 ft. Forming forests on the Mekong-Yangtze divide. Lat. 27° 25′ N. Long. 99° 12′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20133. **Machilus** sp. aff. **Kurzii,** King. Shrub or tree of 20–40 ft. In fruit. Foliage and fruits aromatic. Thickets and mixed forests in side valleys on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 42′ E. Alt. 6–7,000 ft. Sept. 1921. N.W. Yunnan.

20134. **Euonymus Monbeigii,** W. W. Sm. Shrub of 20–30 ft. Flowers greenish-yellow. In thickets by streams on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 8–10,000 ft. April 1921. N.W. Yunnan.

20135. **Syringa Potaninii,** Schneid. Shrub of 6–12 ft. Flowers white, flushed purple exterior, fragrant. In thickets by streams on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 7–8,000 ft. March 1921. N.W. Yunnan.

20136. **Dipelta yunnanensis,** Franch. Shrub of 6–9 ft. Flowers creamy-white, faintly flushed rose exterior. In thickets and on margins of forests on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 8–9,000 ft. March-April 1921. N.W. Yunnan.

20137. **Epipactis consimilis,** D. Don. Plant of 5–7 inches. Flowers greenish-yellow with purple markings. Dry pasture on the margins of thickets and in forests on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 9–10,000 ft. May 1921. N.W. Yunnan.

20138. **Primula caldaria,** W. W. Sm. et Forrest. Plant of 6–20 inches. Flowers white, fragrant. Amongst lush herbage in the proximity of hot water springs on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 8–9,000 ft. May 1921. N.W. Yunnan.

20139. **Viola Patrinii,** DC. vel aff. Plant of 1–3 inches. Flowers pale blue with darker lines. Moist pasture on the margins of thickets on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 10,000 ft. May 1921. N.W. Yunnan.

20140. **Primula caldaria,** W. W. Sm. et Forrest, var. **nana,** W. W. Sm. et Forrest. Plant of ½–2 ins. Flowers fragrant, white, or white flushed lilac, on boulders and dry stony pasture on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 11–12,000 ft. April-May 1921. N.W. Yunnan.

20141. **Viola Bisseti,** Maxim. Plant of 2–5 inches. Flowers fragrant, white. Margins of cane brakes and thickets on the Yang-dza divide, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 11,000 ft. May 1921. N.W. Yunnan.

20142. **Viburnum Veitchii,** C. H. Wright, vel v. aff. Shrub of 6–9 ft. Flowers creamy yellow. In thickets by streams on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 10,000 ft. April-May 1921. N.W. Yunnan.

20143. **Buddleia agathosma,** Diels. Shrub of 4–7 ft. Flowers deep violet-lilac, fragrant. In thickets on dry slopes on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 8–9,000 ft. May 1921. N.W. Yunnan.

20144. **Prunus triflora,** Roxb. Shrub of 6–12 ft. Flowers white. Margins of thickets by streams on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 6–7,000 ft. May 1921. N. W. Yunnan.

20145. **Pyrus.** Shrub of 20–25 ft. Flowers creamy-yellow. In thickets on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 7–8,000 ft. May 1921. N.W. Yunnan.

20146. **Corydalis** sp. aff. **adunca,** Maxim. Plant of 4–8 inches. Flowers pale yellow, with brownish markings. Amongst boulders on rocky slopes in side valleys on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 9–10,000 ft. June 1921. N.W. Yunnan.

20147. **Arabis alpina,** Linn. var. Plant of 6–14 inches. Flowers white. On dry cliffs and stony pasture on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 9–10,000 ft. June 1921. N.W. Yunnan.

20148. **Deutzia Monbeigii,** W. W. Sm. Shrub of 4–5 ft. In fruit. Dry situations in and on the margins of pine forests on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 8,000 ft. July 1921. N.W. Yunnan.

20149. **Primula sikkimensis,** Hook. Plant of 16–20 inches. In fruit. Moist meadows by streams on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20150. **Saxifraga nutans,** Hook. f. et Thoms. Open moist stony meadows on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20151. **Cotoneaster multiflora,** Bunge. Shrub of 6–9 ft. In fruit, fruits black (!). In open thickets by streams on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 7–8,000 ft. Sept. 1921. N.W. Yunnan.

20152. **Rosa** sp. (In fruit.) Spinous shrub of 3–5 ft. Flowers (?) probably rose (?). Fruits scarlet. Open situations on the margins of pine forests on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 7–8,000 ft. Sept. 1921. N.W. Yunnan.

20153. **Stereocaulon strictum** (Bab.), Nyl. On cliffs and stony pasture on the Yang-dza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 11,000 ft. Sept. 1921. N.W. Yunnan.

20154. **Saussurea.** Plant of 2–3 inches. Flowers rosy-purple, pappus white. Stony moist pasture on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20155. **Saussurea velutina,** W. W. Sm. Plant of 12–16 inches. Flowers deep purple, bracts rose-purple. Forming clumps on stony moorland on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14–14,500 ft. Sept. 1921. N.W. Yunnan.

20156. **Cremanthodium comptum,** W. W. Sm. Plant of 4–9 inches. Flowers fragrant. Ray florets bright yellow, disc florets greenish-yellow. Limestone screes and stony barren pasture on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 15,000 ft. Sept. 1921. N.W. Yunnan.

20157. **Saussurea quercifolia,** W. W. Sm. Plant of 2–4 inches. Flowers bright rose and purplish-blue. Screes and stony pasture on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 15,000 ft. Sept. 1921. N.W. Yunnan.

20158. **Saussurea.** Plant of 1–1½ inches. Flowers crimson and purplish-blue. Stony moist meadows on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20159. **Saxifraga macrostigma,** Franch. var. **Georgeana,** Engl. et Irmsch. fa. **longipila,** E. et I. Matted plant of 2 inches. Flowers orange-yellow. Open alpine meadows on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20160. **Saxifraga melanocentra,** Franch. Plant of 1½–3 inches. Flowers creamy-white with orange at base. Open stony alpine meadows and on rocks on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20161. **Saussurea.** Plant of 15–17 inches. Flowers deep ruddy purple. Open stony meadows on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20163. **Potentilla Sibbaldi,** Haller f. Cushion plant of a few inches diameter. Flowers (?). In fruit. Ledges of cliffs and open stony meadows on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20164. **Cremanthodium Hookeri,** Clarke. Plant of 14–15 inches. Flowers deep orange. Open, moist, stony meadows on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20165. **Cyananthus** sp. aff. **Hookeri,** Clarke. Spreading plant of 2–3 inches. Flowers deep blue. Moist open alpine moorland on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20166. **Triplostegia glandulifera,** Wall. Plant of 12–16 inches. Flowers white, faintly flushed purple exterior. Pasture on the margins of thickets and scrub in shady situations on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 9–11,000 ft. Sept. 1921. N.W. Yunnan.

20167. **Cremanthodium comptum,** W. W. Sm. Plant of 1½–3 inches. Ray florets bright yellow, disc florets dull greenish-yellow, fragrant. Screes and ledges of limestone cliffs on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 15,000 ft. Sept. 1921. N.W. Yunnan.

20168. **Meconopsis speciosa,** Prain. Plant of 1½–2 ft. In fruit. Open rocky alpine slopes and on screes on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20169. **Saussurea Sughoo,** Clarke. Plant of 1½ inches. Florets deep ruddy purple. Stony alpine meadows on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20170. **Meconopsis rudis,** Prain. Plant of 12–18 inches. In fruit. On screes and limestone cliffs on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 15,000 ft. Sept. 1921. N.W. Yunnan
[Probably = F. No. 20070.]

20171. **Aspidium Thomsoni,** Hook. var. Plant of 9–12 inches. Shady dry situations in mixed and pine forests on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 10,000 ft. Sept. 1921. N.W. Yunnan.

20173. **Primula philoresia,** Balf. f. et Ward, vel aff. Matted plant of 1–2 inches. In fruit. Forming cushions on cliffs and screes on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. Sept. 1921. N.W. Yunnan.

20174. **Saxifraga nigroglandulosa,** Engl. et Irmsch. Plant of 1–3 inches. Flowers deep orange-yellow. Forming mats 12–20 inches in diameter on moist, stony, alpine meadows on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. Sept. 1921. N.W. Yunnan.

20175. **Cremanthodium Decaisnei,** Clarke. Plant of 4–9 inches. Flowers fragrant. Ray florets bright orange-yellow, disc florets dull orange-green. On stony, moist alpine pasture on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20177. **Chrysanthemum jugorum,** W. W. Sm. Plant of 2½–6 inches. Ray florets, interior golden-yellow, exterior dull red or red-orange, disc florets dull ruddy greenish-orange. Open, moist stony moorland on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. Sept. 1921. N.W. Yunnan.

20178. **Oreocharis** sp. aff. **Delavayi,** Franch. Plant of 4–6 inches. In fruit. Shady banks and rocks in side valleys on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 10–11,000 ft. Sept. 1921. N.W. Yunnan.

20179. **Berberis subcaulialata,** Schneid. vel aff. Spinous shrub of 1–1½ ft. Flowers orange-yellow. On cliffs, banks and humus-covered boulders in side valleys on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 11–12,000 ft. Sept. 1921. N.W. Yunnan.

20180. **Incarvillea compacta,** Maxim. vel v. aff. Plant of 6–10 inches. In fruit. Open, stony moorland and banks by streams on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. Sept. 1921. N.W. Yunnan.

20181. **Corydalis hemidicentra,** Hand.-Mzt. Plant of 3–4 ins. Flowers pale purple, tipped darker. On limestone screes and stony pasture on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20182. **Corydalis benecincta,** W. W. Sm. Plant of 4–6 inches. Flowers deeply flushed purple, darkest at tip. On screes and ledges of cliffs on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. Sept. 1921. N.W. Yunnan.

[Fruits on sheet.]

20183. **Saussurea subulata,** Clarke. Semi-cushion plant of 6–9 inches diameter. Flowers ruddy purple. Crevices and ledges of limestone cliffs on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20184. **Quercus semecarpifolia,** Sm. Dwarf spinous-leaved shrub of 2–4 ft. In fruit. Clothing considerable moorland areas on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 12,000 ft. Sept. 1921. N.W. Yunnan.

20186. **Nephrodium Filix-mas,** Rich. var. Plant of 9–18 inches. Shady situations in forests on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 11,000 ft. Sept. 1921. N.W. Yunnan.

20187. **Cotoneaster microphylla,** Wall. Prostrate shrub of 2–3 ft. in extent. In fruit, fruits scarlet-crimson. On stony moorland and banks in side valleys on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 10–11,000 ft. Sept. 1921. N.W. Yunnan.

20188. **Primula sinoplantaginea**, Balf. f. forma. Plant of 6–10 inches. In fruit. Open, stony slopes in side valleys on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20189. **Davallia Clarkei**, Baker. Matted plant of 6–10 inches. Dry, shady situations on trees and rocks in side valleys on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 10–11,000 ft. Sept. 1921. N.W. Yunnan.

20191. **Primula sphaerocephala**, Balf. f. Plant of 9–16 inches. Flowers fragrant, deep purplish-blue. Stony alpine meadows on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20193. **Lonicera litangensis**, Batal. Dwarf shrub of 3–4 ft. In fruit, fruits scarlet. On dry, rocky slopes in side valleys on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 11–12,000 ft. Sept. 1921. N.W. Yunnan.

20197. **Primula vittata**, Franch. Amongst scrub by streams on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 12,000 ft. Sept. 1921. N. W. Yunnan.

20198. **Senecio.** Plant of 4–12 inches. Florets bright yellow. Moist, stony alpine pasture on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20199. **Cremanthodium rhodocephalum**, Diels. Plant of 3–7 inches. Phyllaries greenish-purple. Ray florets soft rose-pink, disc florets greenish-yellow. Open, moist, stony alpine meadows and on screes on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. Sept. 1921. N.W. Yunnan.

20200. **Meconopsis rudis**, Prain. Plant of 12–16 inches. In fruit. Ledges of limestone cliffs and screes on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. Sept. 1921. N.W. Yunnan.

[Probably = Nos. 20070 and 20170.]

20201. **Polypodium Heteractis,** Mett. Plant of 6–8 inches. On rocks and trees in side valleys on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 9–10,000 ft. Sept. 1921. N.W. Yunnan.

20202. **Meconopsis integrifolia,** Franch. var. **brevistyla,** Prain. Plant of 10–14 inches. Flowers (?) said to be white (!). In fruit. Dry situations on ledges of cliffs and rocky slopes on the Hom-pu Shan, Mekong-Yangtze divide. Lat. 28° 18′ N. Long. 99° E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20203. **Asplenium Trichomanes,** Linn. Matted plant of 2–4 inches. On dry shady rocks and cliffs on the Hom-pu Shan, Mekong-Yangtze divide. Lat. 28° 18′ N. Long. 99° E. Alt. 12–13,000 ft. Sept. 1921. N. W. Yunnan.

20204. **Delphinium Beesianum,** W. W. Sm. Plant of 3–6 inches. Flowers dull dark purplish-blue. Dry stony alpine meadows on the Hom-pu Shan, Mekong-Yangtze divide. Lat. 28° 18′ N. Long. 99° E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20205. **Aspidium lachenense,** Hook. vel v. aff. Matted plant of 3–4 inches. Dry shady cliffs and stony slopes on the Hom-pu Shan, Mekong-Yangtze divide. Lat. 28° 18′ N. Long. 99° E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20206. **Saussurea villosa,** Franch. var. Plant of 1½–2 inches. Flowers deep purplish-blue and crimson. Stony alpine meadows on the Hom-pu Shan, Mekong-Yangtze divide. Lat. 28° 18′ N. Long. 99° E. Alt. 14–14,500 ft. Sept. 1921. N.W. Yunnan.

20207. **Asplenium fontanum,** Bernh. Plant of 3–8 inches. On humus-covered boulders and cliffs on the Hom-pu Shan. Lat. 28° 18′ N. Long. 99° E. Mekong-Yangtze divide. Alt. 12,000 ft. Sept. 1921. N.W. Yunnan.

20209. **Aspidium Prescottianum,** Hook. Plant of 2–3 ft. Shady dry situations in forests on the Hom-pu Shan, Mekong-Yangtze divide. Lat. 28° 18′ N. Long. 99° E. Alt. 10,000 ft. Sept. 1921. N.W. Yunnan.

20210. **Larix Potanini,** Batalin. Tree of 30–70 ft. Forming forests on the Hom-pu Shan. Lat. 28° 18′ N. Long. 99° E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20211. **Myosotis Hookeri,** Clarke. Forming cushions 6–18 inches in diameter. Flowers bright myosotis-blue. Crevices of cliffs and on screes on the Hom-pu Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 99° E. Alt. 14–14,500 ft. Sept. 1921. N.W. Yunnan.

20212. **Myosotis Hookeri,** Clarke. Forming cushions 6–12 inches diameter. On dry, stony alpine moorland. Flowers bright myosotis blue. On the Na-shu-to Shan, 1½ days east of Atuntze, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 15,000 ft. Sept. 1921. N.W. Yunnan.

20216. **Quercus fenestrata,** Roxb. Tree of 30–50 ft. In mixed forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 8–9,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20217. **Premna interrupta,** Wall. Shrub of 14–20 ft. Foliage only. In thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 9,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20219. **Hymenophyllum polyanthos,** Sw. Matted plant of 1 inch. Forming mats several feet in extent on damp shady rocks in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20221. **Peltigera.** On rocks and trees in shady forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12–13,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20222. **Primula flexilipes,** Balf. f. et Forrest. Plant of 6–12 inches. Flowers primrose-yellow, *not* drying green. Boggy pasture and by streams on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12–13,000 ft. Aug. 1921. Tsarong, S.E. Tibet.

20224. **Salix.** Semi-prostrate shrub of 4–9 inches. ♀ only! Boggy, stony pasture on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14–15,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20225. **Lobelia pleotricha,** Diels. Plant of 2 ft. Flowers pale purplish-blue. Boggy meadows and by streams on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12–13,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20227. **Gentiana phyllocalyx,** Clarke, vel aff. Plant of 1½ inches. Flowers blue, greenish and darker on exterior. Moist moorlands and pasture on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,500 ft. Sept. 1921. Tsarong, S.E. Tibet.

20228. **Cremanthodium reniforme,** Benth. Plant of 14–18 inches. Ray florets orange-yellow, disc florets greenish-yellow, fragrant. Moist, stony alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,500 ft. Sept. 1921. Tsarong, S.E. Tibet.

20229. **Gentiana.** Plant of 3–5 inches. Flowers creamy-white, banded centrally greenish-blue, lobes of corolla speckled green. Moist alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,500 ft. Sept. 1921. Tsarong, S.E. Tibet.

20231. **Primula flexilipes,** Balf. f. et Forrest. Plant of 14–18 inches. In fruit. Open, moist meadows and by streams on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20232. **Rosa sericea,** Lindl. var. Shrub of 4–6 ft. In fruit. Ripe fruits orange-yellow. Open thickets by streams on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13–14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

[= F. No. 20903.]

20233. **Primula flexilipes,** Balf. f. et Forrest. Plant of 6–10 inches. Flowers primrose-yellow. Forming masses in moist situations on the margins of thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14–14,500 ft. Sept. 1921. Tsarong, S.E. Tibet.

20234. **Pedicularis.** Plant of 10–14 inches. Flowers orange-yellow. Stems black or black-brown. Moist situations on the margins of alpine thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20236. **Primula yunnanensis,** Franch. Plant of ½–1¼ inch. Flowers (?). Probably rose or purplish-blue (?). Moist alpine moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20237. **Cremanthodium oblongatum,** Clarke, var. Plant of 6–10 inches. Flowers fragrant. Ray florets golden-yellow, disc florets darker. Open, stony pasture slopes on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20238. **Prunus mugus,** Hand.-Mzt. Shrub of 4–6 ft. Flowers deep yellowish-crimson. Amongst scrub on cliffs and bouldery slopes on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20240. **Pleurogyne.** Matted plant of 1 inch. Flowers pale purplish-blue. Open, moist, peaty moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20241. **Morus notabilis,** Schneid. Shrub or tree of 30–50 ft. In immature fruit. In mixed forest on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20242. **Cladonia furcata** (Huds.), Schrad. var. On rocks and stony moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 28′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20243. **Ficus.** Shrub of 20–35 ft. By streams on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 6,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20245. **Primula flexilipes,** Balf. f. et Forrest. Plant of 12–14 inches. Flowers yellow. Open moist pasture by streams on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20247. **Smilax rigida,** Wall. Spinous shrub of 4–6 ft. In fruit. In scrub on bouldery slopes in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20248. **Ajuga.** Plant of 4–9 inches. Flowers white. Margins of shady scrub and thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11–12,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20249. **Potentilla coriandrifolia,** D. Don. Cushion plant of 6–18 inches diameter. Flowers deep orange. Forming cushions on moist, stony, alpine moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20251. **Cotoneaster.** Shrub of 1–2 feet. Flowers crimson. Amongst scrub on bouldery slopes in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12–13,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20252. **Aster.** Plant of 6–10 inches. Ray florets deep purplish-crimson, disc florets ruddy orange. Alpine pasture on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20254. **Patrinia speciosa,** Hand.-Mzt. Plant of 3–5 inches. Flowers deep orange. Open alpine moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20256. **Senecio.** Plant of 16–20 inches. Flowers orange-yellow. In and on the margins of thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20257. **Lactuca gombalana,** Hand.-Mzt. Plant of 2–4 inches. Flowers pale blue. Moist, stony alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14–15,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20259. **Stereocaulon.** On rocks on open moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20260. **Lichen.** On rocks and open moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20261. **Cladonia.** On rocks and cliffs in alpine side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13–14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20263. **Stellaria decumbens,** Edgew. Mat plant several inches in diameter. Flowers white (?). In fruit. Open, stony alpine pasture on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20264. **Berberis dictyophylla,** Franch. var. Spinous shrub of 3–5 ft. Flowers orange ruddy on exterior. Open alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12–13,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20265. **Cremanthodium bulbilliferum,** W. W. Sm. Plant of 4–6 inches. Ray florets orange-yellow, disc florets same but darker. Open alpine screes and limestone cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20266. **Pyrus.** Shrub of 6–9 ft. Flowers crimson. Thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12–13,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20267. **Gaultheria suborbicularis,** W. W. Sm. Creeping prostrate shrub of many inches. Fruits crimson. Open, stony, moist moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

[Probably = No. 19888.]

20268. **Crawfurdia.** Twining plant of 4–5 ft. Flowers deep purple. On heavy grass and dwarf cane on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20269. **Coriaria terminalis,** Hemsl. Shrub of 2 ft. In fruit, fruits dark dull crimson. Amongst dwarf scrub and boulders in dry side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ E. Long. 98° 24′ E. Alt. 11,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20270. **Primula eucyclia,** W. W. Sm. et Forrest. Plant of 1–2½ inches. Flowers (?). In fruit. Open alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14–15,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

[Probably = F. No. 19868.]

20271. **Primula Dickieana,** Watt, var. **Pantlingii** (King). Plant of 2–3 inches. In fruit. Moist alpine moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14–15,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

[= F. No. 19886.]

20272. **Gentiana.** Massed plant of 1–1½ inches. Flowers bright blue, dark on exterior. Marshy pasture by streams on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20273. **Primula chrysophylla,** Balf. f. et Forrest. Cushion plant of 1–1½ inches. Flowers very pale rose. On cliffs and screes on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20274. **Pyrus.** Shrub of 10–15 ft. In fruit, fruits white, flushed crimson. On cliffs and in thickets in ravines on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20276. **Astragalus acaulis,** Baker. Plant of 2 inches. In fruit. Moist, stony meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14 15,000 ft. Sept. 1921. N.W. Yunnan.

20277. **Saxifraga finitima,** W. W. Sm. Cushion plant of 1 inch. Flowers golden-yellow. On ledges of cliffs and moist, stony pasture on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20280. **Gentiana Wardii,** W. W. Sm. Massed plant of 1 inch. Flowers deep blue, exterior darkest. Marshy, boggy moorland by streams on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20281. **Meconopsis impedita,** Prain. Plant of 2–3 inches. Flowers deep wine-purple, anthers orange. Open, stony pasture on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20284. **Gentiana Arethusae,** Burkill. Plant of 2–4 inches. Flowers light blue, lined green exterior. Marshy, stony meadows on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20285. **Larix Potanini,** Batalin. Tree of 40–80 ft. Forming forests on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 12–14,000 ft. Sept. 1921. N.W. Yunnan.

20288. **Quercus phillyraeoides,** A. Gray, vel aff. Evergreen shrub of 12–40 ft. Foliage slightly spinous. In fruit. Open situations in the Mekong valley. Lat. 28° N. Long. 98° 46′ E. Alt. 6–7,000 ft. Sept. 1921. N. W. Yunnan.

20289. **Lactuca Souliei,** Franch. Plant of ½ inch. Flowers blue. On screes and stony pasture on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20290. **Quercus phillyraeoides,** A. Gray, vel aff. Shrub of 12–35 ft. Foliage evergreen, slightly spinous. Open, dry slopes in the Mekong valley. Lat. 28° N. Long. 98° 45′ E. Alt. 8–9,000 ft. Sept. 1921. N.W. Yunnan.

20292. **Berberis** sp. aff. **concolor,** W. W. Sm. Spinous shrub of 4–8 ft. Flowers yellow, fruits purple-red. In thickets by streams on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 12,000 ft. Sept. 1921. N.W. Yunnan.

20294. **Chimaphila japonica,** Miq. Plant of 3–6 inches. In fruit. In shady mixed forest on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 45′ E. Alt. 7–9,000 Sept. 1921. N.W. Yunnan.

20295. **Berberis** sp. aff. **diaphana,** Maxim. Spinous shrub of 2–5 ft. In fruit, fruits bright red. Open rocky slopes amongst scrub on the Mekong-Salwin divide, Sie-la. Lat. 28° N. Long. 98° 40′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20296. **Corydalis fluminicola,** W. W. Sm. Plant of 10–14 inches. Flowers pale yellow, tipped purple, fragrant. Rocky, grassy slopes on Sie-la, Mekong-Salwin divide. Lat. 28° N. Long. 98° 40′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20298. **Ilex** sp. aff. **corallina,** Franch. Shrub of 6–9 ft. In fruit. By streams in thickets and on cliffs in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20300. **Styrax** sp. Shrub of 20–25 ft. Flowers (?). In fruit. By streams and on cliffs in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20301. **Artemisia codonocephala,** Diels. Plant of 6–9 ft. Flowers (?). Immature. Foliage aromatic. Dry open situations on the margins of thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 9–10,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20303. **Magnolia tsarongensis,** W. W. Sm. et Forrest. Shrub of 7–10 ft. Constantly branched from base. In fruit. In thickets on open hillsides on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 9–10,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

[See also F. No. 20050.]

20304. **Eriobotyra tengyuehensis,** W. W. Sm. Shrub of 20–25 ft. In fruit. In thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 8–9,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20308. **Gentiana** sp. aff. **ornata,** Wall. Plant of 1–2½ inches. Foliage only. Moist, stony alpine pasture on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20309. **Magnolia mollicomata,** W. W. Sm. Shrub or tree of 20–45 ft. In fruit. In small groups in thickets and forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20310. **Taiwania cryptomerioides,** Hayata. Tree of 40–60 ft. bole diameter five ft. from base fully 5 ft. Foliage spinous. In mixed forests in sheltered side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 7–8,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20311. **Acer Campbellii,** Hook. f. et Thoms. var. **yunnanensis** Rehd. Shrub of 6–9 ft. Foliage only. Thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 8–9,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20312. **Senecio Oldhamianus,** Maxim. Plant of 14–24 inches. Flowers golden-yellow. Pasture on the margins of thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11–12,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20313. **Vaccinium oreotrephes,** W. W. Sm. Shrub of 6–12 inches. In fruit, fruits black-purple. Open, stony moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13–14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20314. **Deyeuxia.** Plant of 12–20 inches. Open, stony grassland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11–12,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20316. **Phleum alpinum,** Linn. Plant of 12–18 inches. Open, stony meadows and slopes on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20317. **Allium kansuense,** Regel. Plant of 12–16 inches. Flowers deep blue, drying lighter. Open, dry, stony slopes and meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12–14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20319. **Gentiana sikkimensis,** Clarke, vel v. aff. Straggling plant of 4–8 inches. Flowers white, stained dull greenish-blue. Open, moist, stony slopes on the Londre pass, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 40′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20320. **Brandisia rosea,** W. W. Sm. Shrub of 3–5 ft. Flowers orange-yellow. Open thickets in dry situations on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 40′ E. Alt. 10–11,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20324. **Sedum rotundatum,** Hemsl. Cluster plant of 6–9 inches. In fruit. Ledges and crevices of alpine cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15–16,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20325. **Sedum viscosum,** Praeger. Plant of 3–6 inches. Flowers pale greenish-yellow. Open, stony, shady situations on the margins of thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 8–9,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20326. **Senecio arnicoides,** Wall. Plant of 16–20 inches. Flower heads from 1–3 per scape, fragrant. Ray florets bright golden-yellow, disc florets dull yellowish-green. Open alpine meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14–14,500 ft. Sept. 1921. Tsarong, S.E. Tibet.

20327. **Allium Forrestii,** Diels. Plant of 7–9 inches. Flowers deep dull crimson. Open, stony alpine pasture on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20328. **Meconopsis speciosa,** Prain. Plant of 9-16 inches. Flowers slightly ruddy purplish-blue. Open, stony pasture and on screes on the Londre pass, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 40′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20329. **Berberis dictyophylla,** Franch. Spinous shrub of 2-3 ft. In fruit, fruits red. Open, stony slopes and on cliffs on the Londre pass, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 40′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20331. **Lactuca amoena,** Hand.-Mzt. Plant of 2–3 inches. Florets pale lilac-blue. Stony alpine pasture and slopes on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,500 ft. Sept. 1921. Tsarong, S.E. Tibet.

20334. **Allium Forrestii,** Diels. Plant of 12–16 inches. Flowers deep purple-crimson. On ledges of cliffs and stony pasture on the Londre pass, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 40′ E. Alt. 11–12,000 ft. Sept. 1921. N.W. Yunnan.

20335. **Quercus phillyraeoides,** A. Gray, vel aff. Shrub or tree of 20–45 ft. Leaves slightly spinous. Open, dry situations in oak forests on the Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 43′ E. Alt. 8–9,000 ft. Sept. 1921. N.W. Yunnan.

20336. **Syringa Potaninii,** Schneid. Shrub of 9–18 ft. In fruit. Open, dry situations on the Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 43′ E. Alt. 7–8,000 ft. Sept. 1921. N.W. Yunnan.

20337. **Primula Agleniana,** Balf. f. et Forrest. Plant of 12–16 inches. In fruit. Open, moist meadows by streams on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14–14,500 ft. Sept. 1921. Tsarong, S.E. Tibet.

[= F. No. 20077.]

20340. **Ilex Delavayi,** Franch. Shrub of 2–4 ft. In fruit, fruits scarlet-crimson. Shady rocky situations amongst scrub and boulders in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20341. **Omphalogramma minus,** Hand.-Mzt. vel aff. Plant of 4–13 inches. In fruit. Sheltered situations by streams amongst boulders on the Salwin-Kiu Chiang divide. Lat. 28° 12′ N. Long. 98° 24′ E. Alt. 14–14,500 ft. Sept. 1921. Tsarong, S.E. Tibet.

[= F. No. 20047.]

20342. **Viburnum** sp. aff. **cordifolium,** Wall. Shapely shrub or tree of 20–40 ft. In fruit, fruits ruddy-black. Open thickets by streams in side valleys on the Mekong-Salwin divide. Lat. 28° 10′ N. Long. 98° 43′ E. Alt. 7–8,000 ft. Sept. 1921. N.W. Yunnan.

20343. **Leontopodium Forrestianum,** Hand.-Mzt. sp. nov. Plant of 1–3 inches. Florets brownish-grey. Stony alpine pasture on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14–15,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20345. **Polygonum sphaerostachyum,** Meissn. Plant of 1–2 inches. Flowers bright rose-pink. Mossy, stony moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20346. **Lysionotus serrata,** D. Don. Half-shrubby plant of 1½–2 ft. Flowers ruddy-purple, deepest in bud. Shady humus-covered boulders and on trees and ledges of cliffs in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 7–9,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20349. **Lycopodium.** Moss-like plant of 1–2 inches. Covering shady rocks and banks in dry oak forest in the Mekong valley. Lat. 28° 10′ N. Long. 98° 44′ E. Alt. 7,000 ft. Sept. 1921. N.W. Yunnan.

20350. **Berberis dictyophylla,** Franch. Spinous shrub of 3–4 ft. In immature fruit. Amongst rocks at the base of cliffs in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20351. **Primula dryadifolia,** Franch. Tufted plant of 1½–2½ inches. In fruit. Screes and cliffs and stony pasture on the Londre pass, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 40′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20352. **Selaginella.** Plant of 1–3 inches. Forming mats, many feet in extent on dry, shady banks and rocks in oak and mixed forest in the Mekong valley. Lat. 28° 10′ N. Long. 98° 43′ E. Alt. 7,000 ft. Sept. 1921. N.W. Yunnan.

20353. **Selaginella.** Mat plant of 1–2½ inches. Covering rocks and dry banks in shady situations in mixed forest in the Mekong valley. Lat. 28° 10′ N. Long. 98° 43′ E. Alt. 7,000 ft. Sept. 1921. N.W. Yunnan.

20354. **Primula** sp. (A Nivalid). Plant of 18–20 inches. In fruit. Open alpine meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14–14,500 ft. Sept. 1921. N.W. Yunnan.

20355. **Lactuca Lessertiana,** Clarke. Plant of 4–12 inches. Flowers pale blue. Open, stony, moist moorland on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20358. **Magnolia nitida,** W. W. Sm. Widely spreading tree of 30–45 ft. In fruit. In mixed forests and thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 9–10,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20359. **Sedum Oreades,** Hamet. Plant of 1 inch. Flowers bright orange-yellow. Open, stony meadows and on humus-covered boulders on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20360. **Habenaria chrysea,** W. W. Sm. Plant of 1½–2½ inches. Flowers fragrant, fleshy, pure white; on damp, mossy pasture and humus-covered rocks in alpine side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20361. **Juniperus Wallichiana,** Hook. f. var. **meionocarpa,** Hand.-Mzt. Tree of 30–40 ft. In mixed and conifer forests on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 10–11,000 ft. Sept. 1921. N.W. Yunnan.

20362. **Saussurea tridactyla,** Schultz-Bip. Plant of 6–9 inches. Flowers purple and deep rose. On screes and limestone cliffs on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 15,000 ft. Sept. 1921. N.W. Yunnan.

20364. **Prunus crataegifolius,** Hand.-Mzt. Shrub of 6–9 ft. Flowers pink, fruits scarlet. Forming thickets amongst rocks on Sie-la, Mekong-Salwin divide. Lat. 28° N. Long. 98° 40′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20367. **Crepis Gillii,** S. Moore. Rosulate plant of 1 inch Flowers dark lemon-yellow. On moist, stony pasture and screes on the Mekong-Yangtze divide, east of Yeh-chih. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20368. **Polypodium asterolepis,** Baker. Plant of 18–20 inches. On humus-covered boulders and cliffs in shady side valleys on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 9,000 ft. Sept. 1921. N.W. Yunnan.

20369. **Monotropa uniflora,** Linn. Plant of 3–10 inches. All parts fleshy, steel-grey. On the roots of pines and rhododendrons in mixed forest on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 10–11,000 ft. Sept. 1921. N.W. Yunnan.

20370. **Pyrus.** Shrub of 10–20 ft. In fruit, fruits light crimson. Thickets and cliffs in ravines on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 11,000 ft. Sept. 1921. N.W. Yunnan.

20371. **Saxifraga Wardii,** W. W. Sm. Mat plant of 1½–2½ inches. Flowers bright yellow, calyces crimson. On moist, stony pasture on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20372. **Origanum vulgare,** Linn. Aromatic shrubby plant of 12–16 inches. Flowers purple. Open, stony meadows on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 12,000 ft. Sept. 1921. N.W. Yunnan.

20373. **Crepis umbrella,** Franch. Rosulate plant of 1–2 inches. Flowers light yellow, in fruit. Stony alpine meadows on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20374. **Polypodium flocculosum,** Don. Plant of 12–16 inches. On rocks, ledges of cliffs and dry banks in ravines on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 8–9,000 ft. Sept. 1921. N.W. Yunnan.

20375. **Sedum rotundatum,** Hemsl. Cluster plant of 6–9 inches. In fruit. Ledges and crevices of cliffs on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20377. **Vittaria lineata,** Sw. Plant of 18–24 inches. On dry banks and branches of trees in mixed forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 9,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20378. **Berberis subcaulialata,** Schneid. vel aff. Spinous shrub of 1–2 ft. Flowers yellow. On ledges of cliffs and boulders in ravines on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 12,000 ft. Sept. 1921. N.W. Yunnan.

20379. **Idesia polycarpa,** Maxim. Shrub of 20–40 ft. In fruit, fruits black (?). In mixed thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 7–9,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20380. **Sedum trifidum,** Wall. Plant of 4–7 inches. Flowers very pale yellow, heavily flushed rose exterior. On ledges and in crevices of dry cliffs on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 13,000 ft. Sept. 1921. N.W. Yunnan.

20383. **Balanophora.** Plant of 4–10 inches. Dull crimson throughout and fleshy. Shady forests, parasitic on tree roots on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long 98° 24′ E. Alt. 9–10,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20384. **Sedum.** Plant of 4–6 inches. Flowers yellowish-green, faintly tinged rose exterior. Ledges and in crevices of limestone cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12–13,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20385. **Prunus.** Shrub or tree of 20–40 ft. Fruits red. In mixed thickets in side valleys on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 10,000 ft. Sept. 1921.

20386. **Primula** sp. (A Nivalid). Plant of 1–2 inches. In fruit. Open, stony pasture on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

[Near Mu-li.]

20389. **Prunus crataegifolius,** Hand.-Mzt. Shrub of 6–10 ft. In fruit, fruits crimson. Open, rocky slopes and in thickets on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 11–12,000 ft. Sept. 1921. N.W. Ynnuan.

20390. **Beesia calthaefolia,** Balf. f. et W. W. Sm. Plant of 16–20 inches. In fruit. Shady situations by streams and on the margins of thickets on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 11,000 ft. Sept. 1921. N.W. Yunnan.

20391. **Primula Agleniana,** Balf. f. et Forrest. Plant of 14–16 inches. In fruit. Open, moist situations on meadows on the Mekong-Salwin divide. Lat. 27° 35′ N. Long. 98° 55′ E. Alt. 12–14,000 ft. Sept. 1921. N.W. Yunnan.

[= F. No. 19824.]

20392. **Primula silaensis,** Petitm. Plant of 1–2 inches. In fruit. Moist alpine meadows on the Mekong-Salwin divide. Lat. 27° 35′ N. Long. 98° 56′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20393. **Saussurea.** Tufted plant of 1–2 inches. Flowers deep ruddy purple. Open alpine meadows and on ledges of cliffs on the Mekong-Salwin divide. Lat. 27° 35′ N. Long. 98° 56′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20394. **Meconopsis integrifolia**, Franch. var. **brevistyla, Prain.** Plant of 9–10 inches. In fruit. On cliffs and screes on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 14–14,500 ft. Sept. 1921. N.W. Yunnan.

[= F. No. 20202.]

20395. **Helwingia chinensis,** Batal. Much-branched shrub of 4–9 ft. In fruit, fruits crimson. In thickets by streams in side valleys on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 43′ E. Alt. 7–9,000 ft. Sept. 1921. N.W. Yunnan.

20396. **Cremanthodium comptum,** W. W. Sm. Plant of 4–7 inches. Flowers yellow. In fruit. Screes and ledges of limestone cliffs on the mountains N.E. of Atuntze. Lat. 28° 35′ N. Long. 99° 10′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20397. **Primula ingens,** W. W. Sm. et Forrest. Plant of 2½–3 ft. Flowers fragrant, shades of lavender and purple-blues, occasionally pale-rose (!). In fruit. Moist pasture by streams on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14–14,500 ft. Sept. 1921. N.W. Yunnan.

[This is the most robust and one of the most beautiful Nivalid Primulas I know.]

20398. **Saussurea velutina,** W. W. Sm. Plant of 12 inches. Flowers purple and rose, bracts deep rosy purple. On alpine stony meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20399. **Meconopsis eximia,** Prain. Plant of 6–10 inches. Flowers (?) purple blue. In fruit. On stony alpine pasture on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20400. **Saussurea** sp. aff. **iodostegia,** Hance. Plant of 10–12 inches. Flowers purple and rose. Open alpine moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20401. **Veronica ciliata,** Fisch. Plant of 3-6 inches. Flowers white or pale blue (?). Open moist alpine moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20402. **Sedum angustum,** Maxim. Plant of 12–20 inches. Flowers pale yellowish-green. Dry shady pasture in side valleys on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20403. **Chionanthus retusus,** Lindl. Shrub or tree of 20–45 ft. Flowers white, fruits black. In fruit. Open situations by streams in the Mekong valley. Lat. 28° N. Long. 98° 44′ E. Alt. 6–7,000 ft. Sept. 1921. N. W. Yunnan.

20404. **Meconopsis.** Plant of 20 inches. In fruit. Open stony pasture on the margins of thickets on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20405. **Senecio retusus,** Wall. Plant of 24–28 inches. Flowers fragrant. Ray florets orange-yellow, disc florets dull yellowish-green. By streams on alpine moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13,500 ft. Sept. 1921. Tsarong, S.E. Tibet.

20406. **Meconopsis rudis,** Prain. Plant of 12–16 inches. In fruit. On screes and dry, stony pasture on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13,000 ft. Sept. 1921. N.W. Yunnan.

20408. **Meconopsis impedita,** Prain. Plant of 13–15 inches. In fruit. Stony, grassy moorlands on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20409. **Primula brevifolia,** G. Forrest. Plant of 6–12 inches. In fruit. On moist alpine moorland on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20410. **Cyananthus lobatus,** Wall. var. Plant of 4–8 inches. Flowers deep indigo-purple. Stony alpine meadows on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,500 ft. Sept. 1921. N. W. Yunnan.

20411. **Prunus.** Shrub of 20–30 ft. In fruit, fruits black. Thickets in side valleys on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 10,000 ft. Sept. 1921. N.W. Yunnan.

20412. **Senecio arnicoides,** Wall. Plant of 16–20 inches. In fruit. Open alpine meadows on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20413. **Parrya linearifolia,** W. W. Sm. Plant of 2–3 inches. Flowers rose-pink. Forming cushions on cliffs in ledges and on screes on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12–13,000 ft. June 1921. S.W. Szechuan.

20417. **Jasminum officinale,** Linn. Shrub of 2–3 ft. Flowers fragrant, white, flushed purple-rose exterior. Open rocky dry situations around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 7–8,000 ft. June 1921. S. W. Szechuan.

20420. **Salix** sp. aff. **hastata,** Linn. Dwarf shrub of 6–14 inches. Open, moist, stony meadows by streams on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12,000 ft. June 1921. S.W. Szechuan.

20421. **Paraquilegia microphylla,** Drumm. et Hutch. Tufted plant of 4-6 inches. Flowers pale lavender-blue, anthers yellow, nectaries orange. On ledges and in crevices of cliffs on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12,000 ft. June 1921. S.W. Szechuan.

20423. **Pinguicula alpina,** Linn. Plant of 1–2 inches. Flowers creamy-white, orange at base, flushed and veined purplish-rose. Open, moist, peaty meadows on the Mu-li mountains. Lat. 28° 12′ N. Long.. 100° 50′ E. Alt. 14,000 ft. June 1921. S.W. Szechuan.

20424. **Hemerocallis nana,** Forrest et W. W. Sm. Plant of 6–9 inches. Flowers bright orange-yellow. Stony, grassy openings in pine forests and on the margins of meadows on the Hua-ti-i Shan. Lat. 27° 50′ N. Long. 100° 18′ E. Alt. 11,000 ft. June 1921. N.W. Yunnan.

20427. **Allium.** Plant of 4–9 inches. Flowers greenish-yellow. Stony mountain pasture on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 13,000 ft. June 1921. S.W. Szechuan.

20431. **Berberis dictyophylla,** Franch. Spinous shrub of 4–7 ft. Flowers yellow. Open alpine meadows on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12,000 ft. June 1921. S.W. Szechuan.

20433. **Euonymus tingens,** Wall. Shrub of 10–20 ft. Flowers creamy-yellow, veined and margined deep purple. Open thickets by streams on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 11,000 ft. June 1921. S.W. Szechuan.

20435. **Spiraea mollifolia,** Rehder. Shrub of 2–5 ft. Flowers creamy-yellow. Dry, rocky slopes amongst scrub on the Mu-li mountains. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 9–11,000 ft. June 1921. S.W. Szechuan.

20436. **Potentilla purpurea,** Royle. Plant of 3–5 inches. Flowers deep crimson. Stony, dry meadows on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12,000 ft. June 1921. S.W. Szechuan.

20437. **Anemone rupicola,** Cambess. Stony pasture on the margins of conifer forests on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12–13,000 ft. June 1921. S.W. Szechuan.

20438. **Primula florida** Balf. f. et Forrest. Plant of 3–7 inches. Flowers soft purplish-rose. Stony slopes and on the ledges of cliffs on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 11–12,000 ft. June 1921. S.W. Szechuan.

20439. **Meconopsis integrifolia,** Franch. var. **brevistyla,** Prain. Plant of 2–2½ ft. Flowers yellow. Stony pasture slopes and alpine meadows on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 11–12,000 ft. June 1921. S.W. Szechuan.

20441. **Nomocharis Mairei,** Lévl. Plant of 2½–4 ft. Flowers pure white or faintly flushed purple exterior, spotted rose-purple. Open, grassy slopes on the margins of conifer forests on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 10–11,000 ft. June 1921. S.W. Szechuan.

20443. **Hemerocallis Forrestii,** Diels. Plant of 12–16 inches. Flowers orange. Dry shady situations in thickets on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 10,000 ft. June 1921. S.W. Szechuan.

20448. **Primula muliensis,** Hand.-Mzt. [*Primula Coryana,* Balf. f. et Forrest.] Plant of 14–18 inches. Flowers fragrant, fleshy, soft rose-lavender, throat filled with light sulphur-coloured farina, under surface of foliage peculiarly aromatic when rubbed. Half shady moist situations in conifer and mixed forests on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12,000 ft. June 1921. S.W. Szechuan.

20449. **Primula russeola,** Balf. f. et Forrest. Plant of 10–12 inches. Flowers fragrant, deep navy blue, throat greyish. Ledges and crevices of damp cliffs and moist stony pasture in shady side valleys on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 11–12,000 ft. June 1921. S.W. Szechuan.

20458. **Paeonia Potanini,** Kom. Plant of 1½–2 ft. Flowers dull orange at base, margined and flushed dull crimson. Shady, dry situations amongst scrub on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 50′ E. Alt. 10,000 ft. June 1921. S.W. Szechuan.

20459. **Potentilla fruticosa,** Linn. forma. Shrub of 2–3 feet. Flowers deep orange. Amongst scrub on the margins of moist meadows on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 10–11,000 ft. June 1921. S.W. Szechuan.

20466. **Androsace alchemilloides,** Franch. Cushion plant of 1–1½ inches. Flowers white. On dry limestone cliffs and humus-covered boulders on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 12–13,000 ft. June 1921. S.W. Szechuan.

20467. **Allium yunnanense,** Diels. Plant of 14–16 inches. Flowers white or white flushed rose-pink. Open alpine pasture on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12–13,000 ft. June 1921. S.W. Szechuan.

20468. **Cardamine** sp. aff. **Griffithii,** Hook. f. et Thoms. Plant of 10–14 inches. Flowers white. Moist pasture by streams on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12–13,000 ft. June 1921. S.W. Szechuan.

20469. **Primula szechuanica,** Pax. Plant of 16–20 inches. Flowers yellow. Open, moist meadows on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 12,000 ft. July 1921. S.W. Szechuan.

20471. **Aster brachytrichus,** Franch. var. Plant of 9–12 inches. Ray florets deep lavender-blue, disc florets ruddy yellow-green. Dry, stony pasture on the mountains east of Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12,000 ft. July 1921. S.W. Szechuan.

20472. **Saxifraga likiangensis,** Franch. Cushion plant several inches in diameter. Flowers white. Ledges and in crevices of limestone cliffs on the mountains east of Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12–13,000 ft. June 1921. S.W. Szechuan.

20473. **Primula oxygraphidifolia,** W. W. Sm. et Ward. Plant of 1–2 inches. Flowers lavender-blue, eye grey-yellow. Open stony, moist pasture by streams, on the mountains east of Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12,000 ft. July 1921. S.W. Szechuan.

20474. **Primula conica,** Balf. f. et Forrest. Plant of 14–16 inches. Flowers fragrant, purplish-blue. Open, moist meadows and margins of thickets by streams, on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 10–11,000 ft. June 1921. S.W. Szechuan.

20475. **Primula Wardii,** Balf. f. Plant of 12–16 inches. Flowers fragrant rose or lavender-rose. Open marshy meadows on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 10–11,000 ft. June 1921. S.W. Szechuan.

20478. **Primula pulchella,** Franch. Plant of 6–12 inches. Flowers purplish-blue, eye orange, fragrant. On stony, dry meadows on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 11–12,000 ft. June 1921. S.W. Szechuan.

20479. **Primula brevifolia,** G. Forrest. Plant of 10–16 inches. Flowers deep purplish-blue, eye grey, fragrant. Open, moist, alpine meadows on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12–13,000 ft. June 1921. S.W. Szechuan.

20483. **Primula Wardii,** Balf. f. Matted plant of 4–9 inches. Flowers pale rose-lavender, fragrant. Open, moist meadows, foliage often under water on the hills around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 11,000 ft. July 1921. S.W. Szechuan.

20487. **Primula vittata,** Franch. Plant of 2 ft. Flowers deep purplish-rose. Moist situations on the margins of thickets in half shade on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 10,000 ft. June 1921. S.W. Szechuan.

20494. **Salix hastata,** Linn. Shrub of 2 ft. In fruit. Pasture by streams on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 10–11,000 ft. July 1921. S.W. Szechuan.

20495. **Gentiana stylophora,** Clarke. Plant of 4–5 ft. Flowers greenish-yellow, veined and marbled purple. Moist, alpine meadows on the margins of conifer forests on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 12–13,000 ft. July 1921. S.W. Szechuan.

20496. **Arisaema candidissima,** W. W. Sm. Plant of 12–18 inches. Flowers pure white, or white flushed pink exterior. Dry rocky hillsides on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 8,000 ft. June 1921. S.W. Szechuan.

20497. **Hemerocallis plicata,** Stapf. Plant of 16–22 inches. Flowers orange, brownish on exterior. Amongst scrub on dry rocky hillsides on the mountains east of Yungning. Lat. 27° 30′ N. Long. 100° 56′ E. Alt. 8–9,000 ft. June 1921. S.W. Szechuan.

20499. **Nomocharis aperta,** W. W. Sm. et W. E. Evans, var. **Forrestii,** W. W. Sm. et W. E. Evans. Plant of 16 24 inches. Flowers heavily flushed rose-purple, faintly spotted crimson, with base deep crimson. Open alpine meadows on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 12,000 ft. July 1921. S.W. Szechuan.

20500. **Pedicularis.** Plant of 8–16 inches. Flowers deep rose. Open, dry rocky hillsides amongst scrub on the mountains east of Yungning. Lat. 27° 56′ N. Long. 100° 56′ E. Alt. 10–11,000 ft. July 1921. S.W. Szechuan.

20503. **Caryopteris Forrestii,** Diels. Aromatic shrub of 2 ft. Flowers pale yellow. Open, dry hillsides on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 50′ E. Alt. 7–8,000 ft. July 1921. S.W. Szechuan.

20504. **Trema virgata,** Blume. Shrub of 6 8 ft. Flowers green Dry situations in thickets in the valleys east of Yungning. Lat. 27° 50′ E. Long. 101° E. Alt. 7,000 ft. July 1921. S.W. Szechuan.

20505. **Aspidium lachenense,** Hook. vel v. aff. Plant of 16–18 inches. In dry shady situations on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 10–11,000 ft. July 1921. S.W. Szechuan.

20506. **Juniperus squamata,** Hamilton. Stunted shrub of 6 inches. Dry, stony, limy hillsides on the mountains east of Yungning. Lat. 27° 30′ N. Long. 100° 56′ E. Alt. 9–10,000 ft. July 1921. S.W. Szechuan.

20508. **Primula atrotubata,** W. W. Sm. et Forrest. Plant of 4–8 inches. Flowers deep rose, with crimson eye. Dry stony meadows on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 10–11,000 ft. July 1921. S.W. Szechuan.

20509. **Lonicera hispida,** Pall. Shrub of 2–5 ft. In fruit, fruits scarlet orange. Open situations amongst scrub and in thickets on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 10–11,000 ft. July 1921. S.W. Szechuan.

20510. **Aristolochia Delavayi,** Franch. var. **micrantha,** W. W. Sm. Plant of 6–14 inches. Flowers green exterior, purplish-brown interior (odour unpleasant). Amongst rock and scrub on dry open hillsides on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 9–10,000 ft. July 1921. S.W. Szechuan.

20511. **Calamintha barosma,** W. W. Sm. Strongly aromatic shrub of 6–12 inches. Flowers rose. Dry open rocky slopes and on cliffs on the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 7,000 ft. July 1921. N.W. Yunnan.

20513. **Dicranostigma Franchetianum,** Fedde. Plant of 6–10 inches. Flowers deep orange. Open, dry, sandy pasture on the lower slopes of the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 7,000 ft. July 1921. N.W. Yunnan.

20514. **Aster brachytrichus,** Franch. Plant of 14–16 inches. Ray florets deep purplish-blue, disc florets greenish-yellow. Open alpine meadows on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 13,000 ft. July 1921. N.W. Yunnan.

20515. **Potentilla fruticosa,** Linn. forma. Dwarf semi-prostrate shrub of 1 ft. Flowers deep orange. On dry stony slopes and ledges of cliffs on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 11–12,000 ft. July 1921. N.W. Yunnan.

20516. **Rhamnella Forrestii,** W. W. Sm. vel v. aff. Shrub of 6–9 ft. In fruit. In thickets in dry open situations on the lower slopes on the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 7,000 ft. July 1921. N.W. Yunnan.

20517. **Terminalia triptera,** Franch. Shrub of 10–20 ft. Flowers yellow. Open, dry situations and in thickets on the lower slopes of the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 7,000 ft. July 1921. N.W. Yunnan.

20518. **Quercus.** Spinous leaved shrub of 3 ft. Open, dry stony situations on the lower slopes of the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 7–8,000 ft July 1921. N.W. Yunnan.

20519. **Omphalodes.** Plant of 4–7 inches. Flowers blue. Open, moist, stony pasture on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

20520. **Parrya xerophyta,** W. W. Sm. Loose cushion plant several inches in diameter. In fruit. Open, stony meadows and on ledges of cliffs on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 13–14,000 ft. July 1921. N.W. Yunnan.

20521. **Primula vittata,** Franch. Plant of 2½ ft. Flowers fragrant, deep purplish-red. Moist semi-shady situations in thickets by streams on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 11–12,000 ft. July 1921. N.W. Yunnan.

20522. **Primula chionantha,** Balf. f. et Forrest. Plant of 18–30 inches. In fruit. Open, moist alpine pasture on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 12–13,000 ft. July 1921. N.W. Yunnan.

20523. **Primula bathangensis,** Petitm. Plant of 10–18 inches. Flowers orange. Open dry hillsides on the margins of scrub on the lower slopes of the Bey-ti Shan. Lat. 27° 55′ N. Long. 100° 18′ E. Alt. 7,000 ft. July 1921. N.W. Yunnan.

20524. **Cotinus nana,** W. W. Sm. Shrub of 1½–3 ft. Flowers pink. Open, dry rocky situations on the margins of scrub on the lower slopes of the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 7,000 ft. July 1921. N.W. Yunnan.

20526. **Eritrichium.** Plant of 2½ 4½ inches. Flowers bright blue. Open dry stony meadows and on rocks on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. July 1921. N.W. Yunnan.

20527. **Meconopsis venusta,** Prain. Plant of 3–9 inches. Flowers deep ruddy purple, anthers deep orange. Open stony meadows and slopes on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 11–12,000 ft. July 1921. N.W. Yunnan.

20528. **Wattakaka sinensis,** Stapf. Scandent shrubby plant of 4–6 ft. Flowers creamy-white, flushed and marked pale purple rose on exterior. On scrub in dry open situations on the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 7–8,000 ft. July 1921. N.W. Yunnan.

20529. **Primula sikkimensis,** Hook. Plant of 18–26 inches. Flowers soft yellow, tube darkest. Open moist meadows in and on the margins of scrub, on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 12–13,000 ft. July 1921. N.W. Yunnan.

20530. **Primula** sp. aff. **rigida,** Balf. f. et Forrest. (In fruit). Plant of 4–10 inches. Open, stony, grassy slopes and on the ledges of cliffs on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 13,000 ft. July 1921. N.W. Yunnan.

20531. **Meconopsis venusta,** Prain. Plant of 6–10 inches. In fruit. Limestone screes and cliffs and on limy pasture on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 13–14,000 ft. July 1921. N.W. Yunnan.

20532. **Aster** sp. aff. **yunnanensis,** Franch. Plant of 9–14 inches. Ray florets purple-blue, disc florets yellowish-green. Open, stony, limy pasture on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 13,000 ft. July 1921. N.W. Yunnan.

20533. **Arenaria oresbia,** W. W. Sm. Cushion plant several inches in diameter. Flowering stems 3–4 inches. Flowers white or flushed pale shell-pink. On screes limy pasture and ledges of cliffs on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 13–14,000 ft. July 1921. N.W. Yunnan.

20534. **Didissandra** sp. aff. **lutea,** Craib. Plant of 2–4 inches. Flowers white or very faintly tinged blue. Dry rocks and cliffs on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 12,000 ft. July 1921. N. W. Yunnan.

20535. **Primula lichiangensis,** G. Forrest. Plant of 7–10 inches. Flowers rose. On ledges of cliffs and stony slopes on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 12–13,000 ft. July 1921. N.W. Yunnan.

20537. **Tremacron Forrestii,** Craib. Plant of 2–4 inches. Flowers pale yellow. On cliffs and humus-covered boulders in dry shady side valleys on the Goo-du Shan. Lat. 28° 15′ N. Long. 100° 12′ E. Alt. 12,000 ft. July 1921. N.W. Yunnan.

20538. **Anemone glaucifolia,** Franch. Plant of 2 ft. Flowers soft blue. Open, stony meadows on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

20539. **Primula florida,** Balf. f. et Forrest. Plant of 4–9 inches. Flowers soft purplish-blue, fragrant. On ledges of cliffs and stony meadows and slopes on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

20540. **Aster.** Plant of 2 ft. or more. Ray florets purple, disc florets dull greenish-orange. Open, dry pasture on the margins of thickets on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

20541. **Hibiscus** sp? Shrub of 2–4 ft. Flowers white. Dry situations amongst rocks on the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 7,000 ft. June 1921. N.W. Yunnan.

20542. **Cynanchum** sp. aff. **Roylei,** Wight. Plant of 3–7 inches. Flowers white. Dry, stony slopes on the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 7,000 ft. July 1921. N.W. Yunnan.

20543. **Buddleia eremophila,** W. W. Sm. Stunted shrub of 1–2 ft. Flowers soft bluish-rose, fragrant. Dry, stony slopes and amongst rocks on the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 7,000 ft. July 1921. N.W. Yunnan.

20544. **Croton yunnanensis,** W. W. Sm. Shrub of 3–6 ft. Flowers soft olive-brown. Dry situations amongst scrub on the lower slopes of the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 12′ E. Alt. 7,000 ft. July 1921. N.W. Yunnan.

20545. **Fluggea microcarpa,** Blume. Shrub of 3–5 ft. Flowers green. Dry situations amongst scrub on the lower slopes of the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 12′ E. Alt. 7,000 ft. July 1921. N.W. Yunnan.

20546. **Saussurea spatulifolia,** Franch. Plant of 1–2½ inches. Flowers rosy purple. On screes and ledges of cliffs on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 11–12,000 ft. July 1921. N.W. Yunnan.

20547. **Potentilla articulata,** Franch. Cushion plant several inches in diameter. Flowers orange-yellow. Ledges and crevices of cliffs and boulders on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 12–13,000 ft. July 1921. N.W. Yunnan.

20548. **Primula anisodora,** Balf. f. et Forrest. Foliage fragrant. Plant of 2–3 ft. Flowers black-crimson, with large green eye. On the margins of scrub by streams on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 11–12,000 ft. July 1921. N.W. Yunnan.

20549. **Saussurea.** Plant of 24–30 inches. Flowers rosy-purple. Margins of thickets on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

20550. **Saussurea** sp. aff. **Kunthiana,** Clarke. Plant of 6–12 inches. Flowers deep ruddy-purple. Open alpine meadows on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 13–14,000 ft. July 1921. N.W. Yunnan.

20551. **Androsace erecta,** Maxim. Plant of 8–14 inches. Flowers (?). Open stony meadows on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. July 1921. N.W. Yunnan.

20552. **Cotoneaster** sp. aff. **buxifolia,** Wall. Prostrate shrub of several feet. Flowers heavily flushed crimson. On moist meadows on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 12–13,000 ft. July 1921. N.W. Yunnan.

20554. **Rubus.** Spinous shrub of 4–5 ft. Flowers (?). In alpine thickets and on the margins of forests on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 13,000 ft. July 1921. N.W. Yunnan.

20555. **Microglossa albescens,** Clarke, var. Half shrubby plant of 2–4 ft. Flowers white. Dry open situations on the margins ot scrub on the lower slopes of the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 8–9,000 ft. July 1921. N.W. Yunnan.

20556. **Sageretia theezans,** Brongn. Shrub of 2–4 ft. Flowers creamy-yellow. Open, dry situations amongst rocks on the lower slopes of the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 8,000 ft. July 1921. N.W. Yunnan.

20557. **Androsace sublanata,** Hand.-Mzt. Plant of 10–16 ins. Flowers rose. Open stony pasture by streams on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 11,000 ft. July 1921. N.W. Yunnan.

20558. **Rubia.** Matted plant of 12–14 inches. Flowers black crimson. Dry stony pasture slopes on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

20559. **Wikstroemia leptophylla,** W. W. Sm. Shrub of 2–3 ft. Flowers greenish, black-crimson. Open stony slopes and by streams on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

20560. **Prunus tomentosa,** Thunb. Shrub of 10–20 ft. Foliage only. In thickets by streams on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 8,000 ft. July 1921. N.W. Yunnan.

20561. **Abelia triflora,** R. Br. Shrub of 2–5 ft. Flowers (?). In thickets on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

20562. **Fraxinus** sp. aff. **trifoliolata,** W. W. Sm. Shrub of 6–12 ft. In fruit. On rocky slopes and cliffs on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 8–9,000 ft. July 1921. N.W. Yunnan.

20563. **Colutea** sp. Shrubby plant of 3–5 ft. In fruit. Dry rocky slopes on the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 7,000 ft. July 1921. N.W. Yunnan.

20564. **Chirita pumila,** D. Don. Plant of 3–12 ins. Flowers, limb pale blue, tube yellowish-white. Moist humus-covered boulders by streams on the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 7–8,000 ft. July 1921. N.W. Yunnan.

20565. **Abelia gracilenta,** W. W. Sm. Shrub of 3–5 ft. Flowers pink or white flushed pink. Open thickets by streams on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 8–9,000 ft. July 1921. N.W. Yunnan.

20566. **Spathoglottis pubescens,** Lindl. Plant of 7–14 inches. Flowers orange and brown. Dry stony pasture on the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 7–8,000 ft. July 1921. N.W. Yunnan.

20567. **Indigofera dumetorum,** Craib. Shrubby plant of 2–5 ft. In fruit. Open, sandy, stony situations on the lower slopes of the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 7,000 ft. July 1921. N.W. Yunnan.

20568. **Primula aromatica,** W. W. Sm. et Forrest. Plant of 3–5 inches. Flowers rose, tube yellow. Foliage fragrant. Moist situations on limy cliffs and slopes on the Goo-du Shan. Lat. 28° 16′ N. Long. 100° 12′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

20569. **Didissandra lineata,** Craib. Plant of 3–6 inches. Flowers white, or white flushed blue. Moist limy cliffs and slopes on the Goo-du Shan. Lat. 28° 16′ N. Long. 100° 12′ E. Alt. 10,000 ft. July 1921. N. W. Yunnan.

20570. **Boea** sp. aff. **Clarkeana,** Hemsl. Plant of 3–6 inches. In fruit. On rocks and open grassy slopes on the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

20571. **Arenaria napuligera,** Franch. vel aff. Plant of 2–5 inches. Flowers pink or white flushed pink. Open dry pasture on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 9–10,000 ft. Aug. 1921. S.W. Szechuan.

20572. **Delphinium Beesianum,** W. W. Sm. Plant of 3–7 inches. Flowers dark blue, exterior lightest. Open stony meadows on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 12,000 ft. Aug. 1921. S.W. Szechuan.

20573. **Lonicera.** Shrub of 6–9 ft. In fruit, fruits very dark crimson or black. Open alpine meadows amongst scrub on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 12,000 ft. Aug.-Sept. 1921. S.W. Szechuan.

20574. **Prunus serrula,** Franch. Shrub or tree of 25–50 ft. In fruit, fruits scarlet-crimson. Open thickets and in mixed forests on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 11–12,000 ft. Aug. 1921. S.W. Szechuan.

20575. **Saxifraga Hirculus,** Linn. var. **typica,** Hook. forma **minor,** Engl. et Irmsch. Plant of 2–4 inches. Flowers bright orange-yellow. Ledges of cliffs and stony alpine pasture on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 11–12,000 ft. Aug. 1921. N.W. Yunnan.

20576. **Saxifraga** sp. aff. **pratensis,** Engl. et Irmsch. Plant of 6–13 inches. Flowers deep crimson exterior, interior dull deep orange marbled deep crimson. Gynoecium black-crimson. Open, stony, alpine meadows on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 12,000 ft. Aug. 1921. N.W. Yunnan.

20577. **Fluggea microcarpa,** Blume. Shrub of 4–6 ft. Flowers pale greenish-yellow. On cliffs and open rocky slopes on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 10,000 ft. Aug. 1921. N. W. Yunnan.

20578. **Chrysanthemum jugorum,** W. W. Sm. Plant of 2–7 inches. Ray florets deep orange-yellow, tipped and slightly tinged crimson. Open, stony alpine meadows on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 11,000 ft. Aug. 1921. N. W. Yunnan.

20579. **Pleurogyne.** Plant of 5–9 inches. Flowers very deep purple. Open alpine meadows and slopes on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 12,000 ft. Aug. 1921. N.W. Yunnan.

20580. **Saxifraga** sp. aff. **cardiophylla,** Franch. Tufted plant of 6–12 inches. Flowers interior very deep rich orange, exterior pale orange. Alpine pasture and on ledges of cliffs on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 12,000 ft. Sept. 1921. N.W. Yunnan.

20581. **Uraria sinensis,** Franch. Half shrubby plant of 2–3 ft. Flowers deep purple-blue. In dry pine forests and stony slopes on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 43′ E. Alt. 9–10,000 ft. Sept. 1921. N.W. Yunnan.

20582. **Saxifraga cernua,** Linn. forma. Plant of 5–10 inches. Flowers white. Moist shady ledges of cliffs on the Mekong-Salwin divide. Lat. 27° 56′ N. Long. 98° 43′ E. Alt. 11–12,000 ft. Sept. 1921. N.W. Yunnan.

20583. **Saxifraga Hirculus,** Linn. var. **typica,** Hook. forma **major,** Engl. et Irmsch. Tufted plant of 9–14 inches. Flowers clear orange-yellow. Open moist meadows by streams on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 11,000 ft. Sept. 1921. N.W. Yunnan.

20584. **Incarvillea altissima,** G. Forrest. Plant of 4–6 feet. Flowers pale rose. Dry situations on the margins of thickets on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 7,000 ft. July 1921. S.W. Szechuan.

20585. **Osmanthus Forrestii,** Rehder. Spinous-leaved shrub of 12–30 ft. Foliage only. Dry, scrub clad slopes on the hills around Yung-peh and in the Yangtze valley. Lat. 26° 48′ N. Long. 100° 42′ E. Alt. 6–7,000 ft. Sept. 1921. N.W. Yunnan.

20586. **Microtaena Delavayi,** Prain. Aromatic plant of 3–5 ft. Flowers crimson and yellow. Dry stony slopes and on ledges of limestone cliffs on the eastern flank of the Lichiang range. Lat. 27° 12′ N. Long. 100° 16′ E. Alt. 11–12,000 ft. Sept. 1921. N.W. Yunnan.

20587. **Valeriana stenoptera,** Diels. Plant of 18–24 inches. Flowers white. Open, stony slopes and on cliffs on the eastern flank of the Lichiang range. Lat. 27° 12′ N. Long. 100° 16′ E. Alt. 11–12,000 ft. Sept. 1921. N.W. Yunnan.

20588. **Phyllanthus Roeperianus,** Wall. Dwarf semi-prostrate shrub of 6–8 inches. In fruit, fruits black. On stony slopes and ledges of cliffs on the eastern flank of the Lichiang range. Lat. 27° 12′ N. Long. 100° 16′ E. Alt. 11–12,000 ft. Sept. 1921. N.W. Yunnan.

20589. **Saxifraga chrysanthoides,** Engl. et Irmsch. Mat plant several inches in diameter. Flower stems 1–2 inches in height. Flowers bright orange-yellow. Moist, stony alpine meadows on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 12,000 ft. Sept. 1921. N.W. Yunnan.

20590. **Buxus.** Shrub of 3–6 ft. Dry, open slopes amongst scrub in the Yangtze valley and on the hills around Yungpeh. Lat. 26° 48′ N. Long. 100° 42′ E. Alt. 6–8,000 ft. Sept. 1921. N.W. Yunnan.

20591. **Anemone glaucifolia,** Franch. Plant of 20–30 inches. Flowers deep soft blue. Open, stony pasture on the hills around Yungpeh. Lat. 26° 42′ N. Long. 100° 42′ E. Alt. 8–10,000 ft. Sept. 1921. N.W. Yunnan.

20592. **Senecio.** Plant of 4–9 inches. Flowers fragrant. Ray florets orange-yellow, disc florets dull greenish-orange. Alpine moorland on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 14,000 ft. Oct. 1921. N.W. Yunnan.

20594. **Saussurea wernerioides,** Sch.-Bip. Massed plant of ½–1 inch. Flowers ruddy purple. Moist, stony moorland on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 15,000 ft. Oct. 1921. N.W. Yunnan.

20595. **Androsace Wardii,** W. W. Sm. Plant of 2 inches. Flowers rose (?). In fruit. Open, alpine meadows on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 13,000 ft. Oct. 1921. N.W. Yunnan.

20596. **Saussurea polystichoides,** Hook. f. Plant of 1 inch. Flowers ruddy purple. Open, stony moorland on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 15,000 ft. Oct. 1921. N.W. Yunnan.

20597. **Saussurea taraxacifolia,** Wall. Plant of 6-9 inches. Flowers ruddy purple. On open, stony pasture on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 14,000 ft. Oct. 1921. N.W. Yunnan.

20598. **Saussurea** sp. aff. **uniflora,** Wall. Plant of 3-12 inches. Flowers ruddy purple. On open stony pasture on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 14,000 ft. Oct. 1921. N.W. Yunnan.

20599. **Cephalotaxus drupacea,** Sieb. et Zucc. var. **sinensis,** Rehd. et Wils. Shrub of 6-18 ft. In flower and fruit. In thickets in the Mekong valley. Lat. 27° 30′ N. Long. 99° 6′ E. Alt. 6-7,000 ft. Oct. 1921. N.W. Yunnan.

20600. **Chenopodium hybridum,** Linn. Plant of 12-24 inches. Flowers green. Dry, rocky slopes and on ledges of cliffs in the Wei-Hsi valley. Lat. 27° 18′ N. Long. 99° 12′ E. Alt. 8,000 ft. Oct. 1921. N.W. Yunnan.

20602. **Sedum venustum,** Praeger. Tufted plant of 10-12 inches. In fruit. On ledges of cliffs and stony slopes on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 14,500 ft. Oct. 1921. N.W. Yunnan.

20603. **Cotoneaster** sp. aff. **moupinensis,** Franch. Shrub of 3-4 ft. In fruit. Open, stony slopes on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 13,000 ft. Oct. 1921. N.W. Yunnan.

20604. **Saxifraga Wardii,** W. W. Sm. Plant of 2-3 inches. Flowers yellow. Moist, alpine moorland on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 12-13,000 ft. Oct. 1921. N.W. Yunnan.

20605. **Sedum.** Tufted plant of 6-12 inches. In fruit. Ledges and crevices of cliffs on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 13,000 ft. Oct. 1921. N.W. Yunnan.

20606. **Hippophae rhamnoides,** Linn. Shrub of 12-20 ft. In fruit, fruits red-orange. In thickets on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 12-13,000 ft. Oct. 1921. S.W. Szechuan.

20607. **Saxifraga macrostigma,** Franch. var. Matted plant of 2–3 inches. Flowers orange-yellow. Open, alpine moorland on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 13,000 ft. Oct. 1921. S.W. Szechuan.

20608. **Viburnum Veitchii,** C. H. Wright. Shrub of 3–5 ft. Fruits black. In thickets on the Yang-dze Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 9–10,000 ft. Sept. 1921. N.W. Yunnan.

20609. **Saussurea.** Plant of 18–24 inches. Flowers red-purple. Margins of thickets and in open pine forests on the Yang-dze Shan. Lat. 28° 18′ N. Long. 98° 43′ E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20610. **Primula sinoplantaginea,** Balf. f. forma. Plant of 3–9 inches. In fruit. Margins of scrub and on rocky slopes on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 13–14,000 ft. Oct. 1921. N.W. Yunnan.

20611. **Incarvillea** sp. Plant of 12 inches. In fruit. Open, stony moorland on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 14,000 ft Oct. 1921. N.W. Yunnan.

20612. **Gentiana phyllocalyx,** Clarke, vel aff. Matted plant of 2 inches. Flowers blue. Open, moist alpine pasture on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 14–14,500 ft. Oct. 1921. N.W. Yunnan.

20613. **Saxifraga pallida,** Wall. var. **typica,** Engl. et Irmsch. Plant of 10–14 inches. In fruit. Ledges of cliffs and stony pasture on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 14,000 ft. Oct. 1921. N.W. Yunnan.

20614. **Aconitum Hookeri,** Stapf. Plant of 9–20 inches. Flowers deep purplish-blue. Open, alpine meadows on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 14,000 ft. Oct. 1921. N.W. Yunnan.

20615. **Dracocephalum Forrestii,** W. W. Sm. Plant of 12–20 inches. Flowers soft deep purple. Open, alpine moorland on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 13,000 ft. Sept. 1921. N.W. Yunnan.

20616. **Quercus** sp. aff. **glauca,** Thunb. Shrub or tree of 20–45 ft. In fruit. Open situations in the Mekong valley. Lat. 28° N. Long. 98° 44′ E. Alt. 7,000 ft. Oct. 1921. N.W. Yunnan.

20617. **Primula ingens,** W. W. Sm. et Forrest. Plant of 2–2½ ft. In fruit. Open meadows by streams on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 14,500 ft. Oct. 1921. N.W. Yunnan.

20618 **Juniperus Wallichiana,** Hook. f. var. **meionocarpa,** Hand.-Mzt. Shrub or tree of 20–40 ft. In fruit. Open, mixed and conifer forest on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 12–13,000 ft. Oct. 1921. N.W. Yunnan.

20619. **Viburnum betulifolium,** Batal. Shrub of 9–12 ft. In fruit, fruits red. In open thickets by streams on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20620. **Dracocephalum Forrestii,** W. W. Sm. Open, stony meadows on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 13,000 ft. Sept. 1921. N.W. Yunnan.

20621. **Berberis.** Spinous shrub of 4–6 ft. In fruit, fruits crimson. Open, alpine meadows amongst scrub on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 12–13,000 ft. Oct. 1921. N.W. Yunnan.

20622. **Potentilla articulata,** Franch. Cushion plant several inches in diameter. In fruit. Open alpine moorland on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 14,500 ft. Oct. 1921. N.W. Yunnan.

20623. **Saxifraga finitima,** W. W. Sm. Mat plant several inches in diameter. Flower stems 1 inch. In fruit. Open alpine moorland on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 14,000 ft. Oct. 1921. N.W. Yunnan.

20624. **Euonymus tingens,** Wall. Shrub of 12–24 ft. In fruit. In thickets by streams in side valleys on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 10–11,000 ft. Sept. 1921. N.W. Yunnan.

20626. **Spiraea molilfolia,** Rehder. Shrub of 2–5 ft. In fruit. Dry rocky slopes amongst scrub on the Mu-li mountains. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 9–11,000 ft. Sept. 1921. S.W. Szechuan.

20632. **Buxus.** Shrub of 6–10 ft. Open thickets and forests on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 9–10,000 ft. Oct. 1921. S.W. Szechuan.

20633. **Berberis dictyophylla,** Franch. vel aff. Spinous shrub of 3–5 ft. In fruit, fruits scarlet-crimson. Open alpine meadows on the Mu-li mountains. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 11,000 ft. Sept. 1921. S.W. Szechuan.

20634. **Achillea Millefolium,** Linn. Plant of 2 ft. Flowers white. On open alpine meadows on the Yungning-Yangtze divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 11–12,000 ft. Sept. 1921. N.W. Yunnan.

20635. **Inula** sp.? Shrub of 1–2½ ft. Flowers orange-yellow. Dry rocky situations on the Yungning-Yangtze divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 7,000 ft. Sept. 1921. N.W. Yunnan.

20637. **Elsholtzia** sp. aff. **cristata,** Willd. Aromatic plant of 1–3 inches. Flowers deep rose, bracts purple. Moist open meadows and by streams on the Mu-li mountains. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 11–12,000 ft. Sept. 1921. S.W. Szechuan.

20639. **Primula muliensis,** Hand.-Mzt. [*Primula Coryana,* Balf. f. et Forrest.] Plant of 14–20 inches. In fruit. Moist situations in conifer and mixed forests on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12–13,000 ft. Sept. 1921. S.W. Szechuan.

20640. **Gentiana** sp. aff. **ornata,** Wall. Plant of 10–12 inches. Flowers deep clear blue. Open moist alpine meadows on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 11–12,000 ft. Oct. 1921. S.W. Szechuan.

20641. **Aster vestitus,** Franch. Plant of 3–4 ft. Ray florets deep magenta-rose, disc florets dull orange. Open situations on the margins of thickets on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 11,000 ft. Sept. 1921. S.W. Szechuan.

20643. **Crataegus chungtienensis,** W. W. Sm. Shrub of 10–20 ft. In fruit, fruits red. Open thickets and by streams on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 11–12,000 ft. Sept. 1921. S.W. Szechuan.

20644. **Ilex Pernyi,** Franch. Spinous-leaved shrub of 10–18 ft. In fruit, fruits crimson. Open mixed forests on slopes on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 11,000 ft. Sept. 1921. S.W. Szechuan.

20645. **Silene oblanceolata,** W. W. Sm. vel aff. Plant of 4–7 inches. Flowers rose. Open dry clayey pasture and on cliffs on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 10–11,000 ft. Sept. 1921. S.W. Szechuan.

20646. **Gnaphalium hypoleucum,** DC. var. Plant of 3–4 ft. Flowers bright orange. Open, dry, stony pasture on the margins of thickets and forests on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 10,000 ft. Sept. 1921. S.W. Szechuan.

20647. **Swertia Delavayi,** Franch. Plant of 6–14 inches. Flowers pale blue, lined darker. Open dry alpine pasture on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 11–12,000 ft. Sept. 1921. S.W. Szechuan.

20649. **Campanula chrysosplenifolia,** Franch. Plant of 3–10 inches. Flowers pale blue. Humus-covered boulders, ledges of cliffs and stony slopes on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 11–12,000 ft. Sept. 1921. S.W. Szechuan.

20650. **Tanacetum Pallasianum,** Trautv. et Mey. var. Aromatic plant of 2–2½ ft. Flowers golden-yellow. On ledges of cliffs and amongst boulders on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 11,000 ft. Sept. 1921. S.W. Szechuan.

20652. **Hemerocallis nana,** Forrest et W. W. Sm. Plant of 6–9 inches. In fruit. Stony, grassy openings in pine forests on the Hua-ti-i Shan. Lat. 27° 50′ N. Long. 100° 18′ E. Alt. 11,000 ft. Oct. 1921. N.W. Yunnan.

20653. **Erigeron linifolius,** Willd. Plant of 18–24 inches. Flowers greenish-yellow. Open, stony, clayey slopes on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 9,000 ft. Sept. 1921. S.W. Szechuan.

20654. **Erigeron multiradiatus,** Benth. Plant of 12–16 inches. Ray florets deep lavender, disc florets greenish-yellow. Open, stony meadows on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 50′ E. Alt. 11,000 ft. Sept. 1921. S.W. Szechuan.

20655. **Dracocephalum** sp.? Plant of 2–4 ft. Foliage pleasantly aromatic with a lemon-like fragrance. Flowers deep blue. Open situations on grassy slopes and by streams on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 11,000 ft. Sept. 1921. S.W. Szechuan.

20656. **Aster** sp. aff. **asperulus,** Nees. Plant of 12–16 inches. Ray florets deep purple-lavender, disc florets dull ruddy orange. Open, dry, clayey slopes on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 10–11,000 ft. Sept. 1921. S.W. Szechuan.

20658. **Primula** sp. aff. **pulchella,** Franch. Plant of 12–14 inches. In fruit. Open, dry pasture and amongst scrub on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 11–12,000 ft. Sept. 1921. S.W. Szechuan.

20659. **Parasenecio Forrestii,** W. W. Sm. et J. Small. Plant of 18–20 inches. Flowers yellow. Open, dry, rocky slopes and on the margins of scrub on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 10–11,000 ft. Sept. 1921. S.W. Szechuan.

20660. **Tanacetum** sp. aff. **Delavayi,** Franch. Plant of 6–12 inches. Flowers orange-yellow. Moist, stony moorland on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 12,000 ft. Sept. 1921. S. W. Szechuan.

20661. **Primula brevifolia,** G. Forrest. Plant of 6–10 ins. In fruit. Open, moist alpine pasture on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 13,000 ft. Sept. 1921. S.W. Szechuan.

20662. **Chelonopsis siccanea,** W. W. Sm. Shrub of 4–6 ft. Flowers dull rose-red. Open, dry situations in the Yangtze valley, north of Feng-kou. Lat. 27° 42′ N. Long. 100° 27′ E. Alt. 7–8,000 ft. Sept. 1921. N. W. Yunnan.

20663. **Swertia.** Plant of 4–8 inches. Flowers bluish-white, veined purple. Open, stony, alpine meadows on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 11–12,000 ft. Sept. 1921. S.W. Szechuan.

20664. **Scutellaria** sp. aff. **tenax,** W. W. Sm. Plant of 10–14 inches. Flowers blue. Open, clayey pasture and by streams on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 11,000 ft. Sept. 1921. S.W. Szechuan.

20665. **Primula bathangensis,** Petitm. Plant of 1–2 ft. Flowers deep orange-yellow. Open, dry, rocky slopes in the Yangtze valley, north of Feng-kou. Lat. 27° 42′ N. Long. 100° 27′ E. Alt. 8,000 ft. Sept. 1921. N.W. Yunnan.

20666. **Lilium Bakerianum,** Coll. et Hemsl. Plant of 16–20 inches. Flowers fragrant, pure white or white faintly flushed rose exterior, minutely spotted purple interior. Open, dry, rocky hillsides, generally on slate, in the Yangtze valley, north of Feng-kou. Lat. 27° 42′ N. Long. 100° 27′ E. Alt. 7–9,000 ft. Aug. 1921. N. W. Yunnan.

20667. **Sedum Forrestii,** R. Hamet. Plant of 1½–2 inches. Flowers dull brassy yellow. On rocks and dry, stony hillsides in the Yangtze valley, north of Feng-kou. Lat. 27° 42′ N. Long. 100° 27′ E. Alt. 8–9,000 ft. Aug. 1921. N.W. Yunnan.

20669. **Allium Forrestii,** Diels. Plant of 12–16 inches. Flowers very deep purple-magenta. Open alpine meadow on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 56′ E. Alt. 12–13,000 ft. Oct. 1921. S.W. Szechuan.

20671. **Lonicera syringantha,** Maxim. var. Shrub of 3–5 ft. In fruit, fruits crimson. Open scrub and in thickets on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 11,000 ft. Sept. 1921. N. W. Yunnan.

20672. **Primula Bulleyana,** G. Forrest. Plant of 1½–2 feet. Flowers orange-yellow, flushed crimson exterior, more or less. Marshy meadows on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 12,000 ft. Sept. 1921. N.W. Yunnan.

20673. **Andrachne chinensis,** Bunge. Shrub of 3–4 ft. Flowers greenish-yellow. Open, dry situations amongst scrub on the Yangtze valley. Lat. 27° 45′ N. Long. 100° 27′ E. Alt. 7–8,000 ft. Aug. 1921. N.W. Yunnan.

20674. **Trailliaedoxa gracilis,** W. W. Sm. et Forrest. Shrub of 2 ft. Flowers white flushed rose exterior. Open, dry, rocky hillsides in the Yangtze valley. Lat. 27° 45′ N. Long. 100° 27′ E. Alt. 7–8,000 ft. Aug. 1921. N.W. Yunnan.

20675. **Primula nutans,** Franch. Plant of 12–16 inches. Flowers fragrant, deep blue. Dry, open situations in conifer forests in side valleys on the mountains around Yungpeh. Lat. 26° 48′ N. Long. 100° 50′ E. Alt. 9–10,000 ft. July 1921. N.W. Yunnan.

20676. **Ilex corallina,** Franch. Shrub of 7–12 ft. In fruit. Open thickets and in mixed forests on the mountains around Yungpeh. Lat. 26° 48′ N. Long. 100° 50′ E. Alt. 9–10,000 ft. Sept. 1921. N.W. Yunnan.

20677. **Crepis rigescens,** Diels. Plant of 6–9 inches. Flowers (?) probably yellow. Open, dry pasture on stony slopes on the mountains around Yungpeh. Lat. 26° 48′ N. Long. 100° 50′ E. Alt. 10,000 ft. Sept. 1921. N.W. Yunnan.

20680. **Ilex dipyrena,** Wall. vel. aff. Spinous-leaved shrub of 4–6 ft. Foliage only. In thickets on dry hillsides in the Yangtze valley. Lat. 27° 45′ N. Long. 100° 27′ E. Alt. 8,000 ft. Oct. 1921. N.W. Yunnan.

20681. **Dysophylla communis,** Coll. et Hemsl. Aromatic plant of 4 inches to 2½ ft. Flowers deep to light purple. Covering large areas of dry pasture on hills and plain in the Yangtze valley at Shih-ku. Lat. 26° 50′ N. Long. 100° E. Alt. 6–7,000 ft. Oct. 1921. N.W. Yunnan.

[An oil is extracted from the seeds of this plant for cooking and lighting purposes. In mass as I saw it, a very beautiful plant empurpling the hills and plain for many miles. The local Mosoo name in Lichiang is Kuk-du.]

20682. **Delavaya yunnanensis,** Franch. Shrub of 4–6 ft. In fruit. Open, dry hills around Yungpeh. Lat. 26° 48′ N. Long. 100° 50′ E. Alt. 9–10,000 ft. Sept. 1921. N.W. Yunnan.

20683. **Dicranostigma lactucoides,** Hook. f. et Thoms. Plant of 4–5 ft. Flowers orange. Open, dry situations on the margins of scrub in the Yangtze valley. Lat. 27° 48′ N. Long. 100° 27′ E. Alt. 8–9,000 ft. Sept. 1921. N.W. Yunnan.

20685. **Saxifraga pulchra,** Engl. et Irmsch. Cushion plant of 6–12 inches diameter. Flower stems 1 2½ inches. Flowers rose. On ledges and in crevices of dry shady limestone cliffs on the eastern flank of the Lichiang range. Lat. 27° 12′ N. Long. 100° 12′ E. Alt. 13–14,000 ft. May 1921. N.W. Yunnan.

20686. **Sedum.** Tufted plant of 2–3 inches. Flowers red (!). In crevices and on ledges of limestone cliffs on the eastern flank of the Lichiang range. Lat. 27° 12′ N. Long. 100° 12′ E. Alt. 14–15,000 ft. June 1921. N.W. Yunnan.

20687. **Aster yunnanensis,** Franch. Plant of 16–20 inches. Ray florets deep purple-blue, disc florets dull greenish-orange. Dry stony pastured slopes and on the margins of scrub on the eastern flank of the Lichiang range. Lat. 27° 12′ N. Long. 100° 12′ E. Alt. 14,000 ft. June 1921. N.W. Yunnan.

20688. **Primula yunnanensis,** Franch. Plant of 1–3 inches. Flowers soft rose, fragrant. On dry shady rocks and cliffs on the eastern flank of the Lichiang range. Lat. 27° 12′ N. Long. 100° 12′ E. Alt. 12–13,000 ft. June 1921. N.W. Yunnan.

20691. **Meconopsis Delavayi,** Franch. Plant of 6–10 inches. Flowers deep indigo-purple, anthers orange. Open, stony pasture on the eastern flank of the Lichiang range. Lat. 27° 12′ N. Long. 100° 12′ E. Alt. 12–14,000 ft. June 1921. N.W. Yunnan.

20692. **Colquhounia elegans,** Wall. var. Shrub of 3–6 ft. Flowers soft rose-crimson exterior, interior dull orange lined and marked brown-crimson. Open dry hillsides amongst scrub on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 9,000 ft. Oct. 1921. N.W. Yunnan.

20694. **Euonymus oresbius,** W. W. Sm. Shrub of 3–6 ft. In fruit. On ledges of cliffs and on humus-covered boulders on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 10–11,000 ft. Oct. 1921. N.W. Yunnan.

20695. **Primula Prattii,** Hemsl. Plant of 6–10 ins. In fruit. Dry stony meadows and on ledges of cliffs on the mountains round Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 11,000 ft. Sept.-Oct. 1921. S.W. Szechuan.

20696. **Valeriana Hardwickii,** Wall. Plant of 2–3 ft. Flowers pinkish-white. Shady banks in thickets in the Lu-tien valley, Yangtze-Mekong divide. Lat. 27° 15′ N. Long. 99° 36′ E. Alt. 8–9,000 ft. Oct. 1921. N. W. Yunnan.

20697. **Acrocephalus fruticosus,** Dunn. Aromatic shrub of 1–2½ ft. Flowers pale yellow. Dry, rocky hillsides in the Yangtze valley. Lat. 27° 48′ N. Long. 100° 27′ E. Alt. 7–8,000 ft. Oct. 1921. N.W. Yunnan.

20699. **Campylotropis yunnanensis,** Schindler. Shrub of 6–9 ft. Flowers pale purple and white. Amongst scrub by streams in the Lu-tien valley, Yangtze-Mekong divide. Lat. 27° 15′ N. Long. 99° 36′ E. Alt. 8–9,000 ft. Oct. 1921. N.W. Yunnan.

20700. **Acer Oliverianum,** Pax, vel v. aff. Tree of 30–45 ft. In fruit. In mixed thickets by streams in the Lu-tien valley, Yangtze-Mekong divide. Lat. 27° 15′ N. Long. 99° 36′ E. Alt. 8–9,000 ft. Oct. 1921. N.W. Yunnan.

20701. **Acer robustum,** Pax, vel v. aff. Tree of 30 50 ft. Foliage only. In mixed thickets by streams in the Lu-tien valley, Yangtze-Mekong divide. Lat. 27° 15 N. Long. 99° 36′ E. Alt. 9,000 ft. Oct. 1921. N.W. Yunnan.

[A most glorious bit of colour, pale chrome yellow, but fades in drying! The finest tint in foliage seen this autumn.]

20702. **Onoclea orientalis,** Hook. Plant of 2 2½ ft. Shady moist banks by streams in the Lu-tien valley, Yangtze-Mekong divide. Lat. 27° 15′ N. Long. 99° 36′ E. Alt. 9,000 ft. Oct. 1921. N.W Yunnan.

20703. **Selaginella.** Moss-like plant of 1 inch. Covering shady banks in the Yangtze valley. Lat. 27° 12′ N. Long. 99° 48′ E. Alt. 6,000 ft. Oct. 1921. N.W. Yunnan.

20704. **Sedum.** Plant of 6 12 inches. Flowers yellow. On ledges of cliffs and humus-covered rocks in the Lu-tien valley, Yangtze-Mekong divide. Lat. 27° 15′ N. Long. 99° 36′ E. Alt. 9,000 ft. Oct. 1921. N.W. Yunnan.

20705. **Galinsoga parviflora,** Cav. Plant of 2–3 ft. Ray florets white, disc florets orange. Dry, open situations amongst scrub and also by streams in the Yangtze valley. Lat. 27° 12′ N. Long. 99° 48′ E. Alt. 6–7,000 ft. Oct. 1921. N.W. Yunnan.

20706. **Berberis.** Spinous shrub of 2–5 ft. In fruit, fruits crimson. Amongst scrub on open alpine meadows on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 11–12,000 ft. Sept. 1921. N.W. Yunnan.

20707. **Vaccinium Delavayi,** Franch. Shrub of 1 2½ ft. In fruit, fruits dark crimson. On ledges and in crevices of cliffs on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 12,000 ft. Sept. 1921. N.W. Yunnan.

20709. **Saussurea.** Tufted plant of 4–5 inches. Flowers ruddy purple. Open, stony moorland on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20710. **Aster.** Plant of 6–14 inches. Foliage aromatic when fresh. Ray florets deep blue-purple, disc florets dull greenish-yellow. Open alpine meadows on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20711. **Magnolia denudata,** Desronss. Shrub of 12–14 feet. Flowers (?). In cultivation in Yeh-chih, Mekong valley. Lat. 27° 36′ N. Long. 99° 5′ E. Alt. 6,500 ft. Sept. 1921. N.W. Yunnan.

20712. **Lonicera litangensis,** Batal. Matted shrub of 1–2 ft. In fruit, fruits crimson. Rocky slopes on the mountains east of Atuntze. Lat. 28° 25′ N. Long. 99° 5′ E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20713. **Berberis dictyophylla,** Franch. vel aff. Spinous shrub of 4–6 ft. In fruit, fruits dull crimson. Open rocky slopes amongst scrub on the mountains east of Atuntze. Lat. 28° 35′ N. Long. 99° 5′ E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20716. **Caragana crassicaulis,** Benth. vel aff. Cushion plant of 1–1½ ft. diameter. In fruit. Open meadows and rocky moorland on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 12′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20717. **Lonicera syringantha,** Maxim. var. **minor,** Maxim. Shrub of 2–3 ft. In fruit, fruits scarlet. Rocky slopes on the mountains east of Atuntze. Lat. 28° 35′ N. Long. 99° 5′ E. Alt. 13,000 ft. Sept. 1921. N.W. Yunnan.

20718. **Pleurogyne.** Plant of 6–14 inches. Flowers black-purple. Open alpine meadows on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20719. **Gentiana decorata,** Diels. Matted plant of 1–1½ inches. Flowers very deep blue. Open boggy pasture and by streams on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20720. **Impatiens.** Plant of 2–2½ ft. Flowers white and orange, veined purple. Moist situations on the margins of thickets and by streams on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 11–12,000 ft. Sept. 1921. N.W. Yunnan.

20721. **Pleurogyne.** Plant of 5–10 inches. Flowers pale rosy-purple lined and stained deeper Moist alpine meadows on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20722. **Impatiens** sp. Plant of 14–30 inches. Flowers orange, veined purple. Open, moist situations amongst scrub on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 11–12,000 ft. Sept. 1921. N.W. Yunnan.

20723. **Paraquilegia microphylla,** Drumm. et Hutch. Tufted plant of 6–8 inches. In fruit. In crevices and on ledges of cliffs on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20724. **Leontopodium muscoides,** Hand.-Mzt. Mat plant of 3–4 inches. Flowers greyish-brown. On ledges of cliffs and rocky dry slopes on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20725. **Nomocharis Souliei,** W. W. Sm. et W. E. Evans. In fruit. Margins of scrub on alpine meadows on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20726. **Primula dryadifolia,** Franch. Plant of 1–2½ inches. In fruit. On screes and stony meadows on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20727. **Meconopsis integrifolia,** Franch. var. Plant of 2 ft. In fruit. Open stony pasture slopes on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20728. **Cremanthodium oblongatum,** Clarke, var. Plant of 4–10 inches. In fruit. On stony alpine meadows and slopes on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,500 ft. Sept. 1921. N. W. Yunnan.

20729. **Allium Forrestii,** Diels. Plant of 2–3 inches. Flowers deep purple-crimson. Moist gravelly meadows and on boulders on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20730. **Lactuca Dubyaea,** Clarke. Plant of 6–12 inches. Flowers orange-yellow. Open situations in thickets and mixed forests and on dry grassy slopes on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20731. **Astragalus acaulis,** Baker. Plant of 1–2 inches. In fruit. Open, stony meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,500 ft. Sept. 1921. N.W. Yunnan.

20732. **Randia lichiangensis,** Diels. Matted shrub of 2–4 ft. In fruit, fruits black. Dry rocky slopes in the Atuntze valley. Lat. 28° 30′ N. Long. 98° 54′ E. Alt. 9–10,000 ft. Sept. 1921. N.W. Yunnan.

20733. **Perantha Forrestii,** Craib. Plant of 3–6 inches. Flowers orange. Stony, dry pasture and on boulders on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 10–11,000 ft. July 1921. N.W. Yunnan.

20734. **Didissandra grandis,** Craib. Plant of 6–10 inches. Flowers washed pale blue. Shady rocks and cliffs on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 9–10,000 ft. July-Aug. 1921. N.W. Yunnan.

20736. **Juniperus Wallichiana,** Hook. f. var. **meionocarpa,** Hand.-Mzt. Shrub of 6–10 ft. In fruit. In open situations in side valleys on the mountains N.E. of Atuntze. Lat. 28° 40′ N. Long. 99° 12′ E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20738. **Anemone polycarpa,** W. E. Evans. Plant of 10–14 inches. Flowers greyish-white interior, exterior deep indigo-blue. Moist shady rocks in side valleys on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 11–12,000 ft. Sept. 1921. N.W. Yunnan.

20740. **Abelia triflora,** R. Br. var. Shrub of 4–6 ft. Flowers rose-pink. In mixed scrub and thickets on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 10,000 ft. July 1921. N.W. Yunnan.

20741. **Quercus semecarpifolia,** Sm. Spinous-leaved shrub of 2–3 ft. In fruit. Open, dry, stony slopes on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10,000 ft. Oct. 1921. Tsarong, S. E. Tibet.

20742. **Leontopodium himalayanum,** DC. Plant of 1–2 inches. Flowers grey-brown. Open, stony pasture on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Oct. 1921. Tsarong, S. E. Tibet.

20743. **Primula cycliophylla,** Balf. f. et Farrer, vel aff. Matted plant of 1 inch. In fruit. On moist, stony meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20745. **Quercus variabilis,** Blume. Shrub or tree of 20–50 ft. In fruit. In mixed forests on the dry lower slopes of the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 7–8,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20746. **Gentiana Arethusae,** Burkill. Plant of 3–6 inches. Flowers bright blue, lined darker and green on exterior. Moist meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12–13,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20747. **Saxifraga nigroglandulosa,** Engl. et Irmsch. Tufted plant of 1–1½ inches. Flowers orange-yellow. Stony moist meadows and slopes on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20748. **Pyrus.** Shrub of 10–18 ft. In fruit, fruits light red and white. In open thickets on bouldery slopes on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

0749. **Quercus** sp. aff. **glauca,** Thunb. Shrub or tree of 25–40 ft. In fruit. Dry open situations on the lower slopes of the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 7–8,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20750. **Asplenium Nidus,** Linn. Plant of 2–2½ ft. Shady moist banks and rocks in side valleys on the lower slopes of the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 7–8,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20752. **Pyrus.** Shrub of 20–30 ft. In fruit. In open thickets on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 12,000 ft. Sept. 1921. N.W. Yunnan.

20753. **Quercus** sp. aff. **glauca,** Thunb. Tree of 40–50 ft. In fruit. Dry open situations on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 58′ E. Alt. 7,000 ft. Sept. 1921. N.W. Yunnan.

20754. **Meconopsis integrifolia,** Franch. var. **brevistyla,** Prain. Plant of 2–2½ feet. Flowers yellow. In fruit. Amongst rocks and alpine scrub on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 12′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20755. **Lonicera syringantha,** Maxim. var. **minor,** Maxim. Shrub of 2 ft. In fruit. On cliffs and rocky slopes on the mountains east of Atuntze. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20756. **Quercus** sp. aff. **glauca,** Thunb. Shrub or tree of 20–45 ft. In fruit. Open situations by streams in the Mekong valley. Lat. 28° N. Long. 98° 45′ E. Alt. 7,000 ft. Sept. 1921. N.W. Yunnan.

20757. **Quercus.** Shrub or tree of 15–40 ft. In fruit. In thickets by streams in the Mekong valley. Lat. 28° N. Long. 98° 45′ E. Alt. 7,000 ft. Sept. 1921. N.W. Yunnan.

20758. **Quercus** sp. aff. **glauca,** Thunb. Shrub or tree of 20–60 ft. In fruit. In mixed open forests in the Mekong valley. Lat. 28° N. Long. 98° 45′ E. Alt. 7–8,000 ft. Sept. 1921. N.W. Yunnan.

20759. **Quercus** sp. aff. **glauca,** Thunb. Shrub or tree of 30–50 ft. In fruit. Open thickets in the Mekong valley. Lat. 28° N. Long. 98° 45′ E Alt. 7,000 ft. Sept. 1921. N.W. Yunnan.

20760. **Quercus** sp. aff. **glauca,** Thunb. Tree of 40–50 ft. In fruit. In mixed forests in the Mekong valley. Lat. 28° N. Long. 98° 45′ E. Alt. 7,000 ft. Sept. 1921. N.W. Yunnan.

20761. **Quercus** sp. aff. **glauca,** Thunb. Shrub of 20–40 ft. In fruit. Open thickets in the Mekong valley. Lat. 28° N. Long. 98° 45′ E. Alt. 7,000 ft. Sept. 1921. N.W. Yunnan.

20762. **Quercus** sp. aff. **glauca,** Thunb. Shrub or tree of 25–50 ft. In fruit. In mixed forests in the Mekong valley. Lat. 28° N. Long. 98° 45′ E. Alt. 8,000 ft. Sept. 1921. N.W. Yunnan.

20763. **Acer caudatum,** Wall. var. Shrub or tree of 25–50 ft. In fruit. In mixed forests on Doker-la, Mekong-Salween divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 11,000 ft. Sept. 1921. N.W. Yunnan.

20764. **Primula conica,** Balf. f. et Forrest. Plant of 12–18 inches. In fruit. By streams on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 12,000 ft. Sept. 1921. N.W. Yunnan.

20765. **Primula sinoplantaginea,** Balf. f. vel aff. Plant of 6–12 inches. In fruit. Stony slopes and on ledges of cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20766. **Gentiana Arethusae,** Burkill. Plant of 2–5 inches. Flowers pale clear blue, greenish and darker-lined on exterior. Open moist moorland on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20767. **Buddleia incompta,** W. W. Sm. Shrub of 2–3 ft. In fruit. Open, dry, rocky hillsides in the Atuntze valley. Lat. 28° 30′ N. Long. 98° 54′ E. Alt. 10,000 ft. Sept. 1921. N.W. Yunnan.

20768. **Andrachne chinensis,** Bunge. Dwarf shrubby plant of 6–12 inches. In fruit. Dry, stony slopes in the Atuntze valley. Lat. 28° 30′ N. Long. 98° 45′ E. Alt. 10,000 ft. Sept. 1921. N.W. Yunnan.

20769. **Primula** sp. aff. **apoclita,** Balf. f. et Forrest. Plant of 10–14 inches. In fruit. Moist alpine meadows on Sie-la, Mekong-Salwin divide. Lat. 28° N. Long. 98° 43′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20770. **Prunus crataegifolius,** Hand.-Mzt. Shrub of 4–12 ft. In fruit, fruits red. Open thickets on rocky hillsides on Sie-la, Mekong-Salwin divide. Lat. 28° N. Long. 98° 43′ E. Alt. 13,000 ft. Sept. 1921. N.W. Yunnan.

20771. **Taraxacum officinale,** Web. var. Plant of 3–4 inches. Flowers golden-yellow. Open stony meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20772. **Omphalogramma Souliei,** Franch. Plant of 6–12 inches. Flowers bluish-purple, tube yellow. Moist alpine meadows on Sie-la, Mekong-Salwin divide. Lat. 28° N. Long. 98° 43′ E. Alt. 14,000 ft. July 1921. N.W. Yunnan.

20773. **Androsace spinulifera,** Knuth, forma. Plant of 6–12 inches. Flowers rose. Open alpine meadows on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 12,000 ft. July 1921. N.W. Yunnan.

20774. **Primula sikkimensis,** Hook. vel aff. (Probably a dwarf form). Plant of 16 inches. In fruit. Moist alpine pasture by streams on the mountains east of Atuntze. Lat. 28° 35′ N. Long. 99° 12′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20775. **Lloydia tibetica,** Baker, var. **purpurascens,** Franch. Open grassy slopes and alpine meadows on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 99° 12′ E. Alt. 14,000 ft. Sept. 1921. N.W. Yunnan.

20776. **Amitostigma Forrestii,** Schltr. n. sp. Plant of 2½–5 inches. Flowers rose-purple. Open moist meadows by streams on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 12–13,000 ft. Aug. 1921. N.W. Yunnan.

20777. **Androsace Aizoon,** Duby, var. **coccinea,** Franch. Plant of 6–12 inches. Flowers deep vermilion-red. Dry, open rocky hillsides and on cliffs on the Bey-ti Shan. Lat. 27° 45′ N. Long. 100° 18′ E. Alt. 9,000 ft. July 1921. N.W. Yunnan.

20779. **Meconopsis speciosa,** Prain. Plant of 2 ft. In fruit. Stony alpine slopes on the Na-shu-to Shan, Mekong-Yangtze divide. Lat. 28° 30′ N. Long. 99° 12′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20780. **Delphinium Pylzowi,** Maxim. Plant of 2–5 inches. Flowers deep purple-blue. Stony alpine meadows on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N Long. 98° 40′ E. Alt. 14,000 ft. Oct. 1921. N.W. Yunnan.

20782. **Cyanotis barbata,** D. Don, var. Plant of 4–10 inches. Flowers blue. Open dry meadows on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 9–10,000 ft. Aug. 1921. N.W. Yunnan.

20784. **Pyrus.** Shrub of 20–25 ft. In fruit, fruits red. Open pine and mixed forests in the Wei-Hsi valley. Lat. 27° 12′ N. Long. 99° 16′ E. Alt. 8–9,000 ft. Oct. 1921. N.W. Yunnan.

20785. **Pleurogyne.** Plant of 10–14 inches. Flowers purplish-blue, lined darker, darkest and tinged green exterior. Open alpine meadows on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 11–12,000 ft. Oct. 1921. N.W. Yunnan.

20786. **Wedelia urticaefolia,** DC. Plant of 3–4 ft. Flowers orange. Open dry situations amongst scrub in the Yangtze valley. Lat. 27° 12′ N. Long. 99° 48′ E. Alt. 7,000 ft. Oct. 1921. N.W. Yunnan.

20787. **Adiantum Edgeworthii,** Hook. Matted plant of 3–8 inches. On dry shady banks in the Yangtze valley. Lat. 27° 12′ N. Long. 99° 48′ E. Alt. 6–7,000 ft. Oct. 1921. N.W. Yunnan.

20788. **Adiantum lunulatum,** Burm. var. Matted plant of 4–8 inches. On shady rocks and banks in the Yangtze valley. Lat. 27° 6′ N. Long. 99° 54′ E. Alt. 6,000 ft. Oct. 1921. N.W. Yunnan.

20789. **Lespedeza formosa,** Koehne. Shrub of 4–9 ft. Flowers rose and white. Open dry scrub-clad hills around Wei-Hsi. Lat. 27° 12′ N. Long. 99° 18′ E. Alt. 9,000 ft. Oct. 1921. N.W. Yunnan.

20790. **Periploca** sp. aff. **Forrestii,** Schltr. Scandent shrub of 10–20 ft. In fruit. In thickets by streams in the Wei-Hsi valley. Lat. 27° 18′ N. Long. 99° 12′ E. Alt. 7–8,000 ft. Oct. 1921. N.W. Yunnan.

20791. **Rosa.** Spinous shrub of 2–4 ft. In fruit, fruits orange-red. In open pine forests on the Mekong-Salwin divide. Lat. 27° 56′ N. Long. 98° 45′ E. Alt. 10,000 ft. Sept. 1921. N.W. Yunnan.

20792. **Juniperus recurva,** Hamilton. Shrub or tree of 30–60 ft. In fruit. In open mixed and conifer forest on the Mekong-Salwin divide. Lat. 27° 30′ N. Long. 98° 56′ E. Alt. 10,000 ft. Sept. 1921. N.W. Yunnan.

20796. **Pyrus** sp. aff. **Wilsoniana** (Schneider). Shrub or tree of 20–35 ft. In fruit, fruits white and red. In open thickets and mixed forests on the Mekong-Salwin divide. Lat. 27° 56′ N. Long. 98° 45′ E. Alt. 10–11,000 ft. Sept. 1921. N.W. Yunnan.

20797. **Acer cappadocicum,** Gleditsch, var. **sinicum,** Rehder, vel aff. Shrub or tree of 25–50 ft. In fruit. In mixed forests on the mountains N.E. of Adong (!). Lat. 28° 40′ N. Long. 99° E. Alt. 12,000 ft. Sept. 1921. N.W. Yunnan.

20798. **Jasminum primulinum,** Franch. Shrub of 1–2 ft. Flowers bright yellow. Open, dry rocky slopes on the Yang-dza Shan. Lat. 28° 18′ N. Long. 98° 43 E. Alt. 9,000 ft. Sept. 1921. N.W. Yunnan.

20799. **Ilex.** Shrub of 10–20 ft. In fruit, fruits scarlet. In open thickets on the Londre pass, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 40′ E. Alt. 11,000 ft. Sept. 1921. N.W. Yunnan.

20800. **Erysimum bracteatum,** W. W. Sm. Plant of 1½–2 ft. Flowers orange-yellow. In fruit. Open stony pasture and on ledges of cliffs on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20802. **Berberis.** Spinous shrub of 2–3 ft. In fruit, fruits crimson. On cliffs and rocky slopes in side valleys on the Londre pass, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 40′ E. Alt. 13,000 ft. Sept. 1921. N.W. Yunnan.

20803. **Saxifraga macrostigma,** Franch. var. **typica,** Engl. et Irmsch. Tufted plant of 3–5 inches. Flowers orange-yellow. Stony alpine pasture and on cliffs on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 11,000 ft. Sept. 1921. N. W. Yunnan.

20804. **Campanula crenulata,** Franch. Plant of 4–9 inches. Flowers deep indigo-blue, drying white. On ledges of cliffs and on screes on the Lichiang range. Lat. 27° 20′ N. Long. 100° 18′ E. Alt. 12–13,000 ft. June 1921. N.W. Yunnan.

20805. **Aster likiangensis,** Franch. Plant of 2–6 inches. On alpine pasture and slopes on the Lichiang range. Lat. 27° 25′ N. Long. 100° 18′ E. Alt. 13–14,000 ft. June 1921. N.W. Yunnan.

20806. **Cremanthodium nobile,** Franch. var. Plant of 6–14 inches. Flowers powerfully fragrant. Alpine pasture and slopes on the Lichiang range. Lat. 27° 25′ N. Long. 100° 18′ E. Alt. 12–14,000 ft. June 1921. N.W. Yunnan.

20807. **Alectoria** sp.? Plant of 1 inch. On limestone rocks and cliffs on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 12,000 ft. Sept. 1921. N.W. Yunnan.

20808. **Alectoria** sp.? Plant of 1–2 inches. On limestone rocks and trees in conifer forests on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 12,000 ft. Sept. 1921. N.W. Yunnan.

20809. **Abies.** Tree of 30–70 ft. Foliage only. In conifer forests on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. Sept. 1921. N.W. Yunnan.

20810. **Hymenophyllum polyanthos,** Sw. var. Matted plant of 2–4 inches. Foliage purple. Shady banks and rocks in conifer forests in side valleys on the Tali range. Lat. 25° 40′ N. Long. 100° 10′ E. Alt. 11,000 ft. May 1921. N.W. Yunnan.

20811. **Acorus gramineus,** Ait. Plant of 6–9 inches. Dry open pasture on the lower slopes of the Tali range. Lat. 25° 40′ N. Long. 100° 10′ E. Alt. 6,500–7,000 ft May 1921. N.W. Yunnan.

20812. **Synantherias sylvatica,** Schott. Plant of 3–3½ ft. Spathe dull purple. Open dry situation on margins of thickets between Ta-ping-pu and Yang-pi. Lat. 25° 36′ N. Long. 99° 58′ E. Alt. 9,000 ft. April 1921. N.W. Yunnan.

20813. **Abies Delavayi,** Franch. Tree of 40–80 ft. Forming forests on the eastern flank of the Tali range. Lat. 25° 40′ N. Long. 100° 10′ E. Alt. 10–13,000 ft. May 1921. N.W. Yunnan.

20815. **Chimaphila japonica,** Miq. Plant of 4–7 inches. In fruit. Damp shady mixed forests on the Mekong-Salwin divide. Lat. 27° 56′ N. Long. 98° 45′ E. Alt. 8–9,000 ft. Oct. 1921. N.W. Yunnan.

20818. **Schefflera salweenensis,** W. W. Sm. Shrub of 10–15 ft. In fruit. In thickets in side valleys on the Mekong-Salwin divide. Lat. 27° 56′ N. Long. 98° 45′ E. Alt. 8–9,000 ft. Oct. 1921. N.W. Yunnan.

20822. **Calanthe densiflora,** Lindl. Epiphytic plant of 12–18 inches. Flowers fragrant, interior white, exterior blue. On rocks and trees on the lower slopes of the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 7,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20823. **Ilex micrococca,** Maxim. Shrub of 20 ft. In fruit, fruits very dark crimson. Open thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ E. Alt. 10,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20827. **Magnolia rostrata,** W. W. Sm. Largest foliage seen. Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20828. **Alangium begoniifolium** (Roxb.), Baill. Shrub of 12–20 ft. In fruit, fruits greenish-black. Open thickets by streams in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20829. **Acer Campbelli,** Hook. f. et Thoms. var. **yunnanense,** Rehder. Shrub or tree of 25–45 ft. In fruit. In mixed forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20830. **Enkianthus.** Shrub of 20 ft. In fruit. In mixed thickets by streams in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20831. **Brandisia rosea,** W. W. Sm. Shrub of 2–4 ft. In fruit. Open shady thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 9–10,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20837. **Acer Davidi,** Franch. Shrub of 20–40 ft. In fruit. Mixed thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11–12,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20838. **Ilex** sp. aff. **corallina,** Franch. Shrub of 6–10 ft. In fruit. Open thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

[= F. No. 20298].

20839. **Cotoneaster** sp. aff. **turbinata,** Craib. Shrub of 6–9 ft. In fruit, fruits red. Open thickets by streams on the Londre pass, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 40′ E. Alt. 10–11,000 ft. Oct. 1921. N. W. Yunnan.

20841. **Magnolia mollicomata,** W. W. Sm. Shrub of 30 ft. In fruit. In mixed thickets and forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20842. **Primula limbata,** Balf. f. et Forrest. Plant of 4–9 inches. In fruit. On ledges of moist cliffs and on stony slopes on the Mekong-Salwin divide. Lat. 27° 56′ N. Long. 98° 45′ E. Alt. 12–13,000 ft. Oct. 1921. N.W. Yunnan.

20844. **Manglietia insignis,** Blume, var. Shrub of 20 ft. In fruit. In open thickets and forests in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 9–11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20846. **Omphalogramma** sp. Plant of 6–9 inches. In fruit. Rocky meadows by streams on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14–14,500 ft. Oct. 1921. Tsarong, S.E. Tibet.

[= F. No. 20047 in flower.]

20847. **Philadelphus Delavayi,** Henry. Shrub of 10–12 ft. In fruit. In thickets by streams in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20848. **Senecio saluenensis,** Diels. Plant of 3–4 ft. Flowers dull orange. Open situations on the margins of thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20849. **Pyrus Harrowiana,** Balf. f. et W. W. Sm. Shrub of 10–18 ft. In fruit, fruits pinkish-white. In thickets and on cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20850. **Primula Valentiniana,** Hand.-Mzt. Plant of 2–3 inches. In fruit. Open peaty meadows on the Salwin-Kiu Chiang divide. Lat. 28° 12′ N. Long. 98° 24′ E. Alt. 15–15,500 ft. Oct. 1921. Tsarong, S.E. Tibet.

[= F. No. 20000 in flower.]

20851. **Corylus ferox,** Wall. var. **thibetica,** Franch. Shrub of 10–18 ft. In fruit. In thickets and on cliffs in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20852. **Euonymus acanthocarpa,** Franch. Shrub of 3–5 ft. Fruits and pedicels dull red. Open dry situations on the margins of thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20853. **Corylopsis platypetala,** Rehd. et Wils. Shrub of 8–12 ft. In fruit. In thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11–12,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20854. **Acer tetramerum,** Pax. Shrub of 20–25 ft. In fruit. Mixed thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11–12,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20855. **Styrax.** Shrub of 10–20 ft. In fruit. In open mixed thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20856. **Primula Dickieana,** Watt, var. **Pantlingii** (King). Plant of 2–2½ inches. In fruit. Moist alpine pasture on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,500 ft. Oct. 1921. Tsarong, S.E. Tibet.

[= ? No. 19886.]

20857. **Omphalogramma elegans,** G. Forrest. Plant of 2 ft. In fruit. Alpine pasture on the margins of scrub and bog on the Salwin-Kiu Chiang divide. Lat. 28° 12′ N. Long. 98° 24′ E. Alt. 14,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

[= F. No. 19979 in flower.]

20858. **Nomocharis** sp. Plant of 2–3 ft. In fruit. Margins of forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20859. **Coriaria terminalis,** Hemsl. Shrub of 3–4 ft. In fruit, fruits red. Open dry situations on the margins of thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20860. **Magnolia nitida,** W. W. Sm. Shrub of 20–30 ft. In fruit. In mixed thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20862. **Machilus.** Shrub of 10–20 ft. In fruit, fruits dull dark green-blue. Open thickets by streams on the lower slopes of the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 7–8,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20866. **Magnolia tsarongensis,** W. W. Sm. et Forrest. Shrub of 6–8 ft. In fruit. Branched from base. Open thickets and on the margins of forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20867. **Euonymus theifolia,** Wall. vel aff. Shrub of 3–5 ft. In fruit, fruits dull magenta-red. Open thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20868. **Gaultheria nummularioides,** D. Don, var. Prostrate mat shrub of many inches. Fruits black. On mossy shady banks and open stony moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20869. **Pyrus Harrowiana,** Balf. f. et W. W. Sm. Shrub of 20 ft. In fruit, fruits pink and white. Open thickets on rocky slopes in side valleys, Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11–12,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20870. **Pyrus.** Shrub of 15–20 ft. In fruit, fruits dull red. Open thickets and forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11–12,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20871. **Gaultheria nummularioides,** D. Don. Prostrate creeping shrub of many inches. In fruit, fruits black. On rocks and banks on moist peaty moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 14,500 ft. Oct. 1921. Tsarong, S.E. Tibet.

20872. **Gaultheria suborbicularis,** W. W. Sm. Prostrate shrub of 4–7 inches In fruit, fruits red. Open peaty, moist meadows on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 15,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20873. **Primula biserrata,** G. Forrest. Plant of 6 12 ins. In fruit. Open stony slopes in forests and on cliffs in shady side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12–13,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20874. **Nomocharis** sp. Plant of 20–30 inches. In fruit. May be either 20035 (flowers white) or 20048 (flowers yellow). Locality under snow! Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12 14,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20875. **Gentiana** sp. aff. **ornata,** Wall. Plant of 2–3 inches. Flowers very deep blue, lined dark blue and green exterior. Open marshy moorland on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E Alt. 14–14,500 ft. Oct. 1921. Tsarong, S.E. Tibet.

20878. **Pyrus.** Shrub of 12–16 ft. In fruit. Fruits pinkish-white. Open mixed thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12–13,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20892. **Idesia polycarpa,** Maxim. Shrub of 20–25 ft. In fruit, fruits orange-yellow. Open mixed thickets in side valleys on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 9–10,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20894. **Davidia involucrata,** Baill. Tree of 40–70 ft. In fruit. In mixed forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20901. **Elaeocarpus lanceaefolius,** Roxb. vel aff. Shrub of 10–25 ft. In fruit. In thickets and mixed forests on the lower slopes of the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 7–8,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20903. **Rosa sericea,** Lindl. var. Spinous shrub of 4–6 ft. In fruit, fruits orange-yellow. In open thickets and on the margins of forests on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13–14,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

[= F. No. 20232.]

20916. **Pyrus.** Shrub of 12–20 ft. In fruit, fruits light red. In mixed thickets on rocky slopes on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11–12,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20918. **Primula calliantha,** Franch. Plant of 8–10 inches. In fruit. On open stony pasture and ledges of moist cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 12,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20921. **Prunus serrula,** Franch. Tree of 30–40 ft. In fruit, fruits red. Open thickets and mixed forests on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20922. **Rosa.** Spinous shrub of 6–9 ft. In fruit, fruits bright scarlet. Open situations in thickets and on the margins of forests on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13,000 ft. Oct. 1921. N.W. Yunnan.

20924. **Syringa.** Shrub of 4–7 ft. In fruit. Open thickets and forests on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 12,000 ft. Oct. 1921. N.W. Yunnan.

20925. **Iris.** Plant of 16–20 inches. In fruit. Open alpine meadows on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13,000 ft. Oct. 1921. N.W. Yunnan.

20927. **Tilia chinensis,** Maxim. var. Tree of 50–60 ft. In fruit. In mixed and conifer forests on the mountains N.E. of Adong. Lat. 28° 40′ N. Long. 99° E. Alt. 12,000 ft. Oct. 1921. N.W. Yunnan.

20929. **Berberis subcaulialata,** Schneider, vel aff. Dwarf spinous shrub of 1–2 ft. In fruit, fruits scarlet. Ledges of limestone cliffs and stony slopes on the Bei-ma-Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13–14,000 ft. Oct. 1921. N.W. Yunnan.

20930. **Labiatae.** Shrub, aromatic, of 2 ft. In fruit. Dry open rocky hillsides in the Atuntze valley. Lat. 28° 25′ N. Long. 98° 54′ E. Alt. 9–10,000 ft. Oct. 1921. N.W. Yunnan.

20931. **Berberis Ferdinandi-Coburgi,** Schneider. Spinous shrub of 2–4½ ft. In fruit, fruits purple-black. Open rocky hillsides amongst scrub on the Mekong-Salwin divide. Lat. 27° 56′ N. Long. 98° 45′ E. Alt. 9–10,000 ft. Oct. 1921. N.W. Yunnan.

20935. **Pyrus.** Shrub of 12–16 ft. In fruit, fruits white, flushed pink. Open thickets in side valleys on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 10–11,000 ft. Oct. 1921. N.W. Yunnan.

20936. **Prunus.** Shrub or tree of 20–45 ft. In fruit, fruits black. Open mixed forests on the Mekong-Salwin divide. Lat. 27° 56′ N. Long. 98° 45′ E. Alt. 10,000 ft. Oct. 1921. N.W. Yunnan.

20937. **Pyrus.** Shrub of 15–20 ft. In fruit, fruits pinkish-white. In thickets and on cliffs in side valleys on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 9–11,000 ft. Oct. 1921. N.W. Yunnan.

20938. **Pyrus.** Shrub of 20 ft. In fruit, fruits red. In thickets on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 45′ E. Alt. 10–11,000 ft. Oct. 1921. N.W. Yunnan.

20939. **Pyrus.** Shrub of 10–15 ft. In fruit, fruits pinkish-white. In thickets and on rocky slopes on the Mekong-Yangtze divide. Lat. 27° 30′ N. Long. 99° 10′ E. Alt. 11,000 ft. Oct. 1921. N.W. Yunnan.

20940. **Abies** nov. sp. Tree of 30–70 ft. Forming forests on the Londre pass, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 98° 40′ E. Alt. 12–13,000 ft. Sept. 1921. N.W. Yunnan.

20941. **Pyrus.** Shrub of 6–15 ft. In fruit, fruits red. In thickets and on shady cliffs in side valleys on the Mekong-Yangtze divide. Lat. 27° 36′ N. Long. 99° 10′ E. Alt. 10–12,000 ft. Oct. 1921. N.W. Yunnan.

20942. **Pyrus.** Shrub of 12–25 ft. In fruit, fruits white, flushed pink. Open thickets on cliffs and rocky slopes on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 10–11,000 ft. Oct. 1921. N. W. Yunnan.

20943. **Crepis Gillii,** S. Moore. Plant of 2–3 inches. In fruit. Open, stony pasture and on screes on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. Oct. 1921. N.W. Yunnan.

20944. **Saussurea quercifolia,** W. W. Sm. Plant of 2–3 inches. In fruit. On stony pasture and screes on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 14–15,000 ft. Oct. 1921. N.W. Yunnan.

20945. **Rhamnus** sp. aff. **persica,** Boiss. Spinous shrub of 3 5 ft. In fruit, fruits black. On dry stony scrub-clad hillsides in the Atuntze valley. Lat. 28° 25′ N. Long. 98° 54′ E. Alt. 8–9,000 ft. Oct. 1921. N. W. Yunnan.

20946. **Vaccinium oreotrephes,** W. W. Sm. Shrub of 12–16 inches. Flowers rose, more or less deep. Open peaty pasture and on rocks and boulders on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 13 14,000 ft. Sept. 1921. Tsarong, S.E. Tibet.

20947. **Sedum.** Tufted plant of 9–12 inches. In fruit. On screes and ledges of limestone cliffs on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 12′ E. Alt. 14–15,000 ft. Oct. 1921. N.W. Yunnan.

20948. **Androsace spinulifera,** Knuth. Plant of 14–18 inches. In fruit. Margins of forests and rocky slopes on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 10–11,000 ft. Oct. 1921. N.W. Yunnan.

20951. **Sedum.** Plant of 3–4 inches. Flowers brassy yellow. On shady banks in the Lu-tien valley, Mekong-Yangtze divide. Lat. 27° 15′ N. Long. 99° 36′ E. Alt. 8–9,000 ft. Oct. 1921. N.W. Yunnan.

20952. **Cyperus Iria,** Linn. Plant of 8–10 inches. On moist sandy meadows in the Lu-tien valley, Mekong-Yangtze divide. Lat. 27° 15′ N. Long. 99° 39′ E. Alt. 9,000 ft. Oct. 1921. N.W. Yunnan.

20953. **Viscum monoicum,** Roxb. vel aff. Parasitic shrub of 2–4 ft. In fruit, fruits clear transparent yellow. On *Quercus Delavayi* in mixed forests around Wei-Hsi, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 18′ E. Alt. 9–10,000 ft. Oct. 1921. N.W. Yunnan.

20955. **Myrsine semiserrata,** Wall. Shrub of 3–6 ft. In fruit, fruits dull magenta-purple. Shady situations by streams on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 43′ E. Alt. 8,000 ft. Oct. 1921. N.W. Yunnan.

20959. **Diplarche multiflora,** Hook. f. et Thoms. Shrub of 6–9 inches. In fruit. On open moorland and rocks on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11–12,000 ft. Lat. 28° 24′ N. Tsarong, S.E. Tibet.

20962. **Colquhounia mekongensis,** W. W. Sm. Shrub of 6–8 ft. Flowers dull rose. Open scrub in the Yangtze valley. Lat. 27° 10′ N. Long. 100° E. Alt. 6,000 ft. Oct. 1921. N.W. Yunnan.

20963. **Hemigraphis drymophila,** Diels. Plant of 4–10 inches In fruit. Dry banks and ledges of cliffs in the Yangtze valley. Lat. 27° 10′ N. Long. 100° E. Alt. 6,000 ft. Oct. 1921. N.W. Yunnan.

20964. **Corydalis fluminicola,** W. W. Sm. Plant of 6–8 inches. Flowers fragrant, orange-yellow, tipped deeper. Open, stony pasture slopes on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 42′ E. Alt. 12,000 ft. July 1921. N.W. Yunnan.

20965. **Saussurea velutina,** W. W. Sm. Plant of 6–12 inches. Flowers ruddy purple, bracts rosy-magenta. Stony alpine pasture on the Goo-du Shan. Lat. 28° 12′ N. Long. 100° 12′ E. Alt. 12–13,000 ft. July 1921. N.W. Yunnan.

20966. **Carduus euosmus,** W. W. Sm. Plant of 6 inches. Flowers sweetly fragrant, bright yellow. Open stony slopes in the Atuntze valley. Lat. 28° 25′ N. Long. 98° 54′ E. Alt. 10–11,000 ft. Sept. 1921. N.W. Yunnan.

20967. **Betula utilis,** D. Don, var. Shrub of 12–14 ft. In fruit. In open thickets on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20971. **Tanacetum tenuifolium,** J. Gay. Aromatic plant of 4–6 inches. Flowers orange-yellow. On stony meadows on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 12,000 ft. Nov. 1921. N. W. Yunnan.

20972. **Rosa.** Spinous shrub of 6–8 ft. In fruit, fruits red-orange. On rocky scrubby slopes. N.W. Yunnan.

20974. **Juniperus squamata,** Hamilton. Shrub of 2 ft. In fruit. On rocky slopes and alpine pasture on the Bei-ma Shan Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13,000 ft. Oct. 1921. N.W. Yunnan.

20977. **Stranvaesia Davidiana,** Decne. Shrub of 10–15 ft. In fruit, fruits brilliant scarlet. In thickets and on the margins of mixed forests on the western flank of the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 35′ E. Alt. 9,000 ft. Nov. 1921. N.W. Yunnan.

[= F. No. 19454 in flower.]

20979. **Delphinium Brunonianum,** Royle. Plant of 6 inches. Flowers pale watery blue, lined and based slightly darker. Open, stony meadows on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 12–13,000 ft. Oct. 1921. N.W. Yunnan.

20982. **Crataegus crenulata,** Roxb. forma. Shrub of 6–9 ft. In fruit, fruits bright crimson. By stream in the Wei-Hsi valley. Lat. 27° 19′ N. Long. 99° 12′ E. Alt. 7,000 ft. Oct. 1921. N.W. Yunnan.

20983. **Crataegus crenulata,** Roxb. forma. Shrub of 6–9 ft. In fruit, fruits bright orange-yellow. By stream in the Wei-Hsi valley. Lat. 27° 19′ N. Long. 99° 12′ E. Alt. 7,000 ft. Oct. 1921. N.W. Yunnan.

20984. **Dracocephalum tanguticum,** Maxim. vel v. aff. Plant of 2 ft. In fruit. Open meadows and rocky slopes on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 11,000 ft. Oct. 1921. N.W. Yunnan.

20985. **Polytrichum.** Plant of 2 inches. Covering shady rocks and banks in mixed forests on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 9–10,000 ft. Oct. 1921. N.W. Yunnan.

20986. **Sphagnum squarrosum,** Pers. Plant of 2–3 inches. Boggy meadows on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 11,000 ft. Oct. 1921. N.W. Yunnan.

20988. **Omphalogramma Souliei,** Franch. Plant of 2 ft. In fruit. Open, boggy meadows on the margin of conifer forest. On the Li-ti-ping, Mekong-Yangtze divide. Lat. 27° 12′ N. Long. 99° 38′ E. Alt. 12,000 ft. Nov. 1921. N.W. Yunnan.

20989. **Corylus chinensis,** Franch. Tree of 20–40 ft. In mixed thickets by the Lu-tien river, Mekong-Yangtze divide. Lat. 27° 15′ N. Long. 99° 39′ E. Alt. 9,000 ft. Nov. 1921. N.W. Yunnan.

20990. **Saussurea uniflora,** Wall. Plant of 12–16 inches. Flowers ruddy purple. Open stony alpine meadows on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 12,000 ft. Oct. 1921. N.W. Yunnan.

20991. **Primula sinoplantaginea,** Balf. f. Plant of 8–10 inches. In fruit. Open moist meadows on the Yangtze-Yungning divide. Lat. 28° 20′ N. Long. 100° 36′ E. Alt. 12,000 ft. Nov. 1921. N.W. Yunnan.

20992. **Tofieldia yunnanensis,** Franch. Plant of 2–4 inches. Flowers creamy-white. On rocks and moist stony pasture on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 13,000 ft. Oct. 1921. N.W. Yunnan.

20993. **Primula biserrata,** G. Forrest. Plant of 12–15 ins. In fruit. Open stony slopes and on shady cliffs on the Salwin-Kiu Chiang divide. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 11,000 ft. Oct. 1921. Tsarong, S.E. Tibet.

20994. **Prunus.** Shrub or tree of 30–45 ft. In fruit, fruits black. Open mixed thickets and forests on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 10,000 ft. Oct. 1921. N.W. Yunnan.

20995. **Gentiana Georgei,** Diels. Plant of 1½–2 inches. Flowers deep ruddy purple, base lightest. Open stony pasture on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 12–13,000 ft. Oct. 1921. N.W. Yunnan.

20996. **Sedum Oreades,** Hamet. Plant of 2½–5 inches. Flowers orange-yellow. Moist stony slopes and on ledges of cliffs on the Mekong-Salwin divide. Lat. 27° 36′ N. Long. 98° 56′ E. Alt. 13,000 ft. Oct. 1921. N.W. Yunnan.

20997. **Berberis Jamesiana,** Forrest et W. W. Sm. Spinous shrub of 2–3 ft. In fruit, fruits red. Rocky slopes amongst scrub on the Londre pass, Mekong-Salwin divide. Lat. 28° 16′ N. Long. 98° 40′ E. Alt. 12,000 ft. Oct. 1921. N.W. Yunnan.

20998. **Rosa.** Spinous shrub of 6–15 ft. In fruit, fruits red. Amongst scrub by streams in the Atuntze valley. Lat. 28° 25′ N. Long. 98° 54′ E. Alt. 10,000 ft. Oct. 1921. N.W. Yunnan.

21001. **Vaccinium Delavayi,** Franch. Shrub of 1–2 ft. In fruit, fruits purplish-red. On cliffs and humus-covered boulders on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 10–11,000 ft. Oct. 1921. N.W. Yunnan.

21002. **Berberis** sp. aff. **dictyophylla,** Franch. Spinous shrub of 2–3 ft. In fruit, fruits scarlet-crimson. On ledges of cliffs and stony slopes on the Bei-ma Shan. Lat. 28° 18′ N. Long. 99° 10′ E. Alt. 13,000 ft. Oct. 1921. N.W. Yunnan.

21003. **Allium.** Plant of 3–4 inches. Flowers rose-pink. On stony, dry meadows on the Yangdza Shan, Mekong-Salwin divide. Lat. 28° 18′ N. Long. 99° 42′ E. Alt. 9–10,000 ft. Sept. 1921. N.W. Yunnan.

21004. **Sedum multicaule,** Wall. Plant of 3–5 inches. Flowers yellow. Moist shady banks by streams on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 41′ E. Alt. 9,000 ft. Oct. 1921. N.W. Yunnan.

21007. **Delphinium Beesianum,** W. W. Sm. Plant of 6–8 inches. Flowers soft purplish-blue. Moist, stony meadows and slopes on Doker-la, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 40′ E. Alt. 13,000 ft. Oct. 1921. N.W. Yunnan.

21008. **Gentiana stragulata,** Balf. f. et Forrest, MSS. Plant of 2–3 inches. Flowers deep clear blue, exterior darkest. Moist, stony moorland on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 12–13,000 ft. Nov. 1921. N.W. Yunnan.

21015. **Gentiana Delavayi,** Franch. Plant of 3–7 inches. Flowers clear blue, lined deep ruddy purple on exterior. Dry, stony hillsides and on the margins of scrub on the mountains around Mu-li. Lat. 28° 12′ N. Long. 100° 50′ E. Alt. 9–10,000 ft. Nov. 1921. S.W. Szechuan.

21016. **Abies** nov. sp. Tree of 30–60 ft. In fruit. Forming forests on the mountains east of Atuntze. Lat. 28° 35′ N. Long. 99° 12′ E. Alt. 11,000 ft. Nov. 1921. N.W. Yunnan.

21023. **Ilex.** Shrub of 10–20 ft. In fruit, fruits bright scarlet. In and on the margins of pine and mixed forest on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 36′ E. Alt. 11,000 ft. Nov. 1921. N.W. Yunnan.

21024. **Euonymus ilicifolia,** Franch. Spinous-leaved shrub of 6–9 ft. Flowers dull olive-green, fruits grey-white, seeds scarlet. Dry, open situations amongst scrub and rocks on the Yangtze-Yungning divide. Lat. 27° 48′ N. Long. 100° 12′ E. Alt. 8,000 ft. Nov. 1921. N.W. Yunnan.

21025. **Cotoneaster microphylla,** Wall. var. **vellaea,** Rehd. et Wils. Densely matted shrub of 1½–4 ft. In fruit, fruits scarlet. Open, dry, rocky slopes on the eastern flank of the Lichiang range. Lat. 27° 6′ N. Long. 100° 12′ E. Alt. 9–10,000 ft. Dec. 1921. N.W. Yunnan.

21035. **Viburnum atrocyaneum,** C. B. Clarke. Shapely shrub of 4–6 ft. In fruit, fruits deep purplish blue. In thickets and on the margins of forests on the Lichiang range. Lat. 27° 12′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. Nov. 1921. N.W. Yunnan.

21037. **Cephalotaxus drupacea,** Sieb. et Zucc. var. **sinensis,** Rehd. et Wils. Shrub of 6–25 ft. In fruit. In thickets by streams on the hills south of Wei-Hsi. Lat. 27° 10′ N. Long. 99° 22′ E. Alt. 9–10,000 ft. Nov. 1921. N.W. Yunnan.

21042. **Keteleeria Davidiana,** Beiss. Shrub or tree of 20–25 ft. In mixed forests on the hills around Yung-peh. Lat. 26° 50′ N. Long. 100° 50′ E. Alt. 9–10,000 ft. Dec. 1921. N.W. Yunnan.

21043. **Colquhounia elegans,** Wall. var. Shrub of 3–6 ft. Flowers soft rose. Open, dry situations amongst scrub on the hills around Yung-peh. Lat. 26° 50′ N. Long. 100° 50′ E. Alt. 8–9,000 ft. Dec. 1921. N. W. Yunnan.

21050. **Osmanthus Forrestii,** Rehder. Spinous-leaved shrub of 9–20 ft. Flowers sweetly fragrant, creamy-yellow. Amongst scrub on open rocky hillsides and in open mixed forests on the mountains west of Yung-peh. Lat. 26° 50′ N. Long. 100° 50′ E. Alt. 8–9,000 ft. Dec. 1921. N.W. Yunnan.

21053. **Sophora.** Tree of 30–50 ft. Flowers white (?). In fruit. Open situations in the Lichiang valley. Lat. 27° N. Long. 100° 12′ E. Alt. 8,000 ft. Dec. 1921. N.W. Yunnan.

[From the seeds of this species a ferment is made which is used locally in wine-making.]

21057. **Petrocosmea nervosa,** Craib. Plant of 2–3 inches. In fruit. Ledges of dry limestone cliffs and on boulders on the mountains around Yungpeh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 8–9,000 ft. January 1922. N.W. Yunnan.

21058. **Hoya.** Weakly scandent fleshy plant of 2–5 ft. Flowers (?). Dry open rocky slopes amongst dwarf scrub on boulders on the mountains around Yungpeh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 8,000 ft. January 1922. N.W. Yunnan.

21062. **Elaeagnus lanceolata,** Warbg. Shrub of 5–9 ft. Flowers silvery-grey, tipped brown. In thickets by streams on the mountains north of Yungpeh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 8–9,000 ft. January 1922. N.W. Yunnan.

21063. **Euonymus.** Shrub of 6–18 ft. Flowers crimson-maroon. In dense shady thickets by streams on the hills between the Yang-pi valley and Tai-ping-pu. Lat. 25° 36′ N. Long. 99° 54′ E. Alt. 9,000 ft. January 1922. N.W. Yunnan.

21064. **Colquhounia elegans,** Wall. var. **pauciflora,** Prain. Shrub of 4–6 ft. Flowers dull purplish-crimson exterior, interior dull greenish-yellow, marbled purplish-crimson. Amongst scrub by streams in the Yang-pi valley. Lat. 25° 40′ N. Long. 100° E. Alt. 5,500 ft. January 1922. N.W. Yunnan.

21065. **Smilax pekingensis,** DC. vel aff Dwarf erect shrub of 1–2 ft. Flowers (?). In shady mixed forests and ravines on the hills between Yang-pi and Tai-ping-pu. Lat. 25° 36′ N. Long. 99° 54′ E. Alt. 8–9,000 ft. January 1922. N.W. Yunnan.

21066. **Ainsliaea pertyoides,** Franch. Half-shrubby plant of 2–2½ ft. Flowers white, anthers rose. Shady forests in ravines on the hills between Yang-pi and Tai-ping-pu. Lat. 25° 35′ N. Long. 99° 54′ E. Alt. 8–9,000 ft. January 1922. N.W. Yunnan.

21067. **Andrachne chinensis,** Bunge. Half-shrubby plant of 2–4 ft. Flowers creamy-white. Shady forests in ravines by streams on the hills between Yang-pi and Tai-ping-pu. Lat. 25° 36′ N. Long. 99° 54′ E. Alt. 8–9,000 ft. January 1922. N.W. Yunnan.

21068. **Craibiodendron yunnanense,** W. W. Sm. Shrub of 6–18 ft. In fruit. Open situations in and on the margins of conifer and mixed forests on the hills between Sha-Yang and Chutong. Lat. 25° 20′ N. Long. 99° 36′ E. Alt. 7–8,000 ft. February 1922. N.W. Yunnan.

21069. **Vernonia Henryi,** Dunn. Very weakly scandent or clambering shrub of 6–10 ft. Flowers fragrant, orange-yellow. On and amongst scrub on rocky slopes in the Mekong valley. Lat. 25° 15′ N. Long. 99° 24′ E. Alt. 6,000 ft. February 1922. N.W. Yunnan.

21070. **Picea likiangensis,** Pritzel. Shrub or tree of 10–50 ft. Open conifer and mixed forest on the hills between Yang-pi and Tai-ping-pu. Lat. 25° 36′ N. Long. 99° 54′ E. Alt. 8–9,000 ft. January 1922. N.W. Yunnan.

21071. **Blumea Eberhardtii,** Gagnep. Plant of 2–3½ feet. Flowers yellowish-green. By streams in shady forests on the hills between Yang-pi and Tai-ping-pu. Lat. 25° 36′ N. Long. 99° 54′ E. Alt. 8,000 ft. January 1922. N.W. Yunnan.

21072. **Clematis Armandi,** Franch. Scandent shrub of 6–15 ft. Flowers creamy-yellow, fragrant. Young foliage ruddy. By streams in open mixed forest in the Yang-pi valley. Lat. 25° 40′ N. Long. 100° E. Alt. 5,500 ft. January 1922. N.W. Yunnan.

21073. **Buchnera cruciata,** Ham. Plant of 6–16 inches. Flowers bright blue. Dry grassy slopes amongst scrub in the Salwin valley. Lat. 25° 3′ N. Long. 98° 57′ E. Alt. 3,200 ft. February 1922. N.W. Yunnan.

21074. **Aristolochia (Isotrema)** sp. Scandent shrub of 6–10 ft. Foliage only. On scrub by shady streams in the Salwin valley. Lat. 25° 3′ N. Long. 98° 57′ E. Alt. 3,000 ft. February 1922. N.W. Yunnan.

21075. **Gastrodia elata,** Blume. Duplicate of F. No. 1921. N.W. Yunnan.

21076. **Pyrus.** Shrub or tree of 20–40 ft. Flowers yellowish-green. Shady situations on forest-clad cliffs in ravines on the divide between the Yung-chang valley and Pu-piao. Lat. 25° 6′ N. Long. 99° 12′ E. Alt. 7,000 ft. February 1922. N.W. Yunnan.

[See F. No. 21096.]

21077. **Litsea pungens,** Hemsl. vel aff. Shrub of 12–16 ft. Flowers yellow, foliage and bark aromatic. Shady thickets by streams on the hills between Yang-pi and Tai-ping-pu. Lat. 25° 36′ N. Long. 99° 54′ E. Alt. 8–9,000 ft. January 1922. N.W. Yunnan.

21078. **Wendlandia tinctoria,** DC. Shrub of 6–10 ft. Flowers fragrant, creamy-white. Amongst scrub on open dry slopes in the Salwin valley. Lat. 25° 3′ N. Long. 98° 57′ E. Alt. 3,000 ft. February 1922. N.W. Yunnan.

21079. **Callicarpa.** Shrub of 12 16 ft. In fruit, fruits black. Amongst scrub and in thickets in dry situations in the Salwin valley. Lat. 25° 3′ N. Long. 98° 57′ E. Alt. 3,000 ft. February 1922. N.W. Yunnan.

21080. **Michelia manipurensis,** Watt, vel aff. Tree of 25–50 ft. Flowers deep creamy-yellow, fragrant. Mixed forest on the hills between the Yung-chang valley and Pu-piao. Lat. 25° 6′ N. Long. 99° 12′ E. Alt. 7,000 ft. February 1922. N.W. Yunnan.

21081. **Trachelospermum.** Semi-scandent shrub of 10–25 ft. Flowers (?) white (?). Amongst scrub by streams in the Salwin valley. Lat. 25° 3′ N. Long. 98° 57′ E. Alt. 3,000 ft. February 1922. N.W. Yunnan.

21082. **Daphne papyracea,** Wall. var. Shrub of 1–2½ ft. Flowers white, strongly fragrant. By streams on the hills between the Yang-Chang valley and Pu-piao. Lat. 25° 6′ N. Long. 99° 12′ E. Alt. 6,000 ft. February 1922. N.W. Yunnan.

21083. **Styrax Buchanani,** W. W. Sm. Tree of 60–90 ft. Flowers creamy-white. In heavy jungle in the Taping valley, E. Burmah. Lat. 24° 35′ N. Long. 97° 35′ E. Alt. 3–4,000 ft. March 1922. Burmah.

21084. **Zanthoxylum Piasezkii,** Maxim. vel aff. Spinous shrub of 6–9 ft. Flowers greenish-orange. Open dry hillsides amongst scrub on the hills between Yung-chang and Pu-piao. Lat. 25° 6′ N. Long. 99° 12′ E. Alt. 7,000 ft. February 1922. N.W. Yunnan.

21085. **Ilex venulosa,** Hook. f. Shrub of 10–20 ft. Flowers greenish-white Open thickets by streams in the Salwin valley. Lat. 25° 3′ N. Long. 98° 57′ E. Alt. 3–3,500 ft. February 1922. N.W. Yunnan.

21086. **Prunus triloba,** Lindl. var. Shrub of 2–3 ft. Flowers pure white. In cultivation. Tengyueh. Lat. 25° 2′ N. Long. 98° 30′ E. Alt. 5,300 ft. March 1922. N.W. Yunnan.

21090. **Viburnum brachybotryum,** Hemsl. var. **tengyuehense,** W. W. Sm. Shrub of 12–18 ft. Flowers creamy-yellow, fragrant. In open thickets by streams on the Shweli-Salwin divide. Lat. 25° 6′ N. Long. 98° 44′ E. Alt. 8,000 ft. March 1922. N.W. Yunnan.

21091. **Sabia dumicola,** W. W. Sm. Shrub of 6–10 ft. Flowers olive-green. Margins of thickets on the Shweli-Salwin divide. Lat. 25° 6′ N. Long. 98° 44′ E. Alt. 7–8,000 ft. March 1922. N.W. Yunnan.

21092. **Combretum** sp. aff. **chinense,** Roxb. Shrub of 6–9 ft. Flowers creamy-white, drying yellow. Thickets by streams in the Salwin valley. Lat. 25° 3′ N. Long. 98° 57′ E. Alt. 2,500 ft. April 1922. N.W. Yunnan.

21093. **Lonicera similis,** Hemsl. var. **Delavayi,** Rehder. Scandent shrub of 10–15 ft. Flowers yellow. On scrub in thickets in the Salwin valley. Lat. 25° 3′ N. Long. 98° 57′ E. Alt. 3,000 ft. April 1922. N.W. Yunnan.

21094. **Cryptolepis Buchanani,** Roem. et Sch. Scandent shrub of 12–18 ft. Flowers fragrant, greenish-white. On scrub in thickets by streams in the Salwin valley. Lat. 25° 3′ N. Long. 98° 57′ E. Alt. 2,500 ft. April 1922. N.W. Yunnan.

21095. **Diospyros** sp. aff. **dumetorum,** W. W. Sm. Shrub of 4–8 ft. Flowers greenish-orange. Amongst scrub on open hillsides in the Salwin valley. Lat. 25° 3′ N. Long. 98° 57′ E. Alt. 2,500 ft. April 1922. N.W. Yunnan.

21096. **Pyrus.** Shrub or tree of 20–40 ft. Shady situations on forest-clad cliffs in ravines on the divide between the Yung-chang hills and Pu-piao. Lat. 25° 6′ N. Long. 99° 12′ E. Alt. 7,000 ft. April 1922. N.W. Yunnan.

[Duplicate of F. No. 21076 in full foliage.]

21097. **Bothryospermum tenellum,** Fisch. et Mey. Plant of 3–8 inches. Flowers pale blue. Dry clayey pasture on the foothills at north-east end of the Yung-chang valley. Lat. 25° 10′ N. Long. 99° 20′ E. Alt. 7–8,000 ft. April 1922. N.W. Yunnan.

21098. **Bothryospermum.** Plant of 4–10 inches. Flowers pale blue. Dry clayey pasture on the foothills at north east end of the Yung-chang valley. Lat. 25° 10′ N. Long. 99° 20′ E. Alt. 7–8,000 ft. April 1922. N. W. Yunnan.

21099. **Randia** sp. aff. **sinensis,** Roem. et Sch. Shrub of 8–10 ft. Flowers greenish-white. In thickets by streams in the Salwin valley. Lat. 25° 3′ N. Long. 98° 57′ E. Alt. 2,500–3,000 ft. April 1922. N.W. Yunnan.

21100. **Dichotomanthes tristaniaecarpa,** Kurz. Shrub of 9–25 feet. Flowers creamy-white. Open situations by streams and on the margins of thickets on the divide between the Sha-Yang and Chutong valleys. Lat. 25° 20′ N. Long. 99° 36′ E. Alt. 6–8,000 ft. April 1922. N.W. Yunnan.

21101. **Ophiorrhiza lurida,** Hook. f. vel aff. Creeping weakly scandent plant of 9–20 inches. Flowers dull purple. Amongst grass on dry stony slopes in the Salwin valley. Lat. 25° 3′ N. Long. 98° 57′ E. Alt. 3,000 ft. April 1922. N.W. Yunnan.

21102. **Toxocarpus** sp. aff. **villosus,** Decne. Scandent plant of 3–5 ft. Flowers white. On trees in side valleys in the Salwin valley. Lat. 25° 3′ N. Long. 98° 57′ E. Alt. 4–4,500 ft. April 1922. N.W. Yunnan.

21103. **Primula sino-mollis,** Balf. f. Plant of 6–18 inches. Flowers rose, eye lighter. Shady moist banks in thickets on the Shweli-Salwin divide, Salwin valley. Lat. 25° 6′ N. Long. 98° 46′ E. Alt. 8,000 ft. April 1922. N.W. Yunnan.

21104. **Pyrus.** Shrub of 12–20 ft. Flowers white. In open mixed forests and thickets on the Shweli-Salwin divide. Lat. 25° 6′ N. Long. 98° 46′ E. Alt. 7–8,000 ft. April 1921. N.W. Yunnan.

21106. **Rosa.** Spinous shrub of 6–12 ft. Branches arched. Flowers fragrant, creamy-white, yellow when freshly open. In thickets in the Lichiang valley. Lat. 27° 50′ N. Long. 100° 15′ E. Alt. 8,500 ft. May 1922 N.W. Yunnan.

21107. **Sibiraea tomentosa,** Diels. Dwarf shrub of 1–3 ft. Flowers olive-yellow. On ledges of limestone cliffs and humus-covered boulders on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 15′ E. Alt. 11,000 ft. May 1922. N.W. Yunnan.

21108. **Quercus** sp. aff. **Gilliana,** Rehd. et Wils. Compact evergreen shrub of 6–12 ft. In mixed scrub on the hills south-west of Lichiang. Lat. 26° 42′ N. Long. 100° 8′ E. Alt. 9,000 ft. May 1922. N.W. Yunnan.

21111. **Millettia.** Semi-scandent shrub of 10–20 ft. Flowers fragrant, pale greenish-yellow. On trees and scrub in ravines on the hills between Tai-ping-pu and Huang-lien-pu. Lat. 25° 33′ N. Long. 99° 53′ E. Alt. 7–8,000 ft. April 1922. N.W. Yunnan.

21112. **Styrax shweliensis,** W. W. Sm. Shrub of 18–25 ft. Flowers creamy-white, fragrant. In open mixed forest on the hills between Sha-yang and Chu-tong. Lat. 25° 20′ N. Long. 99° 36′ E. Alt. 8,000 ft. April 1922. N.W. Yunnan.

21113. **Castanopsis** sp. aff. **tribuloides,** A. DC. Shrub of 30 ft. Open thickets in side valleys on the hills between Sha-yang and Chu-tong. Lat. 25° 20′ N. Long. 99° 36 E. Alt. 7,000 ft. April 1923. N.W. Yunnan.

21115. **Quercus Delavayi,** Franch. Shrub of 10–25 ft. In mixed oak scrub on dry rocky slopes on the col between the Langkung and Chien-chuan valleys. Lat. 26° 24′ N. Long. 100° E. Alt. 7,000 ft. May 1922. N.W. Yunnan.

21116. **Plantago major,** Linn. var. Plant of 9–12 inches. Open, stony pasture on the hills between Sha-yang and Chu-tong Lat. 25° 20′ N. Long. 99° 36′ E. Alt. 6,000 ft. April 1922. N.W. Yunnan.

21117. **Castanopsis** sp. aff. **tribuloides,** A. DC. Tree of 20–45 ft. In mixed forests on the hills between Yangpi and Tai-ping-pu. Lat. 25° 36′ N. Long. 99° 54′ E. Alt. 7,000 ft. April 1922. N.W. Yunnan.

21118. **Rhamnus Hemsleyanus,** Schneid. Shrub of 20–25 ft. Flowers (?). In thickets by streams on the hills between Sha-yang and Chu-tong. Lat. 25° 20′ N. Long. 99° 36′ E. Alt. 7,000 ft. April 1922. N.W. Yunnan.

21119. **Stachyurus chinensis,** Franch. Shrub of 6–10 feet. Flowers pale green. Thickets by streams on the hills between Tai-ping-pu and Yang-pi. Lat. 25° 36′ N. Long. 99° 54′ E. Alt. 8,000 ft. April 1922. N.W. Yunnan.

21120. **Phoebe Forrestii,** W. W. Sm. Shrub of 20–30 ft. Foliage only. In thickets by streams on the hills between Tai-ping-pu and Yang-pi. Lat. 25° 36′ N. Long. 99° 54′ E. Alt. 8,000 ft. April 1922. N.W. Yunnan.

21121. **Buddleia heliophila,** W. W. Sm. Shrub of 4–7 ft. Flowers rose-pink to soft lavender, fragrant. Dry banks amongst scrub on the margins of pine forests on the hills between Tai-ping-pu and Yangpi. Lat. 25° 36′ N. Long. 99° 54′ E. Alt. 7–8,000 ft. April 1922. N.W. Yunnan.

21122. **Ligustrum compactum,** Hook. f. et Thoms. Shrub of 4–8 ft. Flowers fragrant, creamy-yellow. Open thickets on dry hillsides on the hills between Tai-ping-pu and Yang-pi. Lat. 25° 36′ N. Long. 99° 54′ E. Alt. 8,000 ft. April 1922. N.W. Yunnan.

21125. **Salix eriophylla,** Anderss. Shrub of 3–9 ft. Open scrubby hills on the plateau between Tengyueh and the Shweli. Lat. 25° 4′ N. Long. 98° 40′ E. Alt. 7,000 ft. April 1922. N.W. Yunnan.

21126. **Prunus.** Shrub of 12–20 ft. Flowers white. Amongst scrub on the hills between Tengyueh and the Shweli. Lat. 25° 4′ N. Long. 98° 40′ E. Alt. 7,000 ft. April 1922. N.W. Yunnan.

21127. **Salix.** Shrub of 4–6 ft. Flowers yellow. By streams in open forest on the Shweli-Salwin divide. Lat. 25° 6′ N. Long. 98° 46′ E. Alt. 8,000 ft. April 1922. N.W. Yunnan.

21128. **Eriobotrya.** Shrub of 12–18 ft. Foliage only. Young leaves, margins serrate, slightly spinous. Open forests and thickets on the hills north of Yungpeh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 8–9,000 ft. February 1922. N.W. Yunnan.

[An unique plant of which I hope to get further and better material.]

21130. **Primula polyphylla,** Franch. (Dwarf form). Plant of 1–3 inches. Flowers pale lavender-blue, with eye yellow, fragrant. Marshy pasture on the eastern flank of the Lichiang range. Lat. 27° 10′ N. Long. 100° 12′ E. Alt. 10,000 ft. January 1922. N.W. Yunnan.

21131. **Rosa.** Spinous semi-scandent shrub of 10–20 feet. Flowers fragrant, rose-pink with a coppery tinge, on and amongst scrub in thickets on the hills around Yungpeh. Lat. 24° 40′ N. Long. 100° 45′ E. Alt. 7–8,000 ft. March 1922. N.W. Yunnan.

[This species, though undoubtedly wild, is found in many Yunnan valleys always near cultivated areas and may be an escape! It is also in cultivation. Very fine colour and fragrance, but only semi-double.]

21132. **Prunus brachypoda,** Batal. Tree of 25–45 ft. Flowers creamy-white. In mixed forests and thickets on the hills north of Yungpeh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 8–9,000 ft. March-April 1922. N.W. Yunnan.

21134. **Pyrus.** Shrub of 18–20 ft. Flowers pinkish, flushed and margined deep crimson-rose, calyces and pedicels deep crimson. In a thicket on the Lichiang plain. Lat. 27° N. Long. 100° 14′ E. Alt. 8,400 ft. April 1922. N.W. Yunnan.

[Said to be the only specimen, and never fruits.]

21137. **Pyrus.** Shrub of 12–25 ft. Flowers creamy-yellow. Open thickets by streams on the hills north of Yungpeh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 9,000 ft. April 1922. N.W. Yunnan.

21138. **Periploca** sp. aff. **Forrestii,** Schltr. Scandent shrub of 10–16 ft. Flowers green. On scrub in thickets by streams on the hills north of Yungpeh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 8,000 ft. March 1922. N.W. Yunnan.

21139. **Ulmus.** Shrub or tree of 30–60 ft. Flowers brownish-green, precocious. Open situations on the Lichiang plain. Lat. 27° N. Long. 100° 12′ N. Alt. 8,500 ft. February 1922. N.W. Yunnan.

21140. **Quercus.** Shrub of 20–30 ft. In open mixed thickets and forests on the hills between Sha-yang and Chu-tong. Lat. 25° 20′ N. Long. 99° 36′ E. Alt. 7,000 ft. April 1922. N.W. Yunnan.

21141. **Quercus.** Shrub of 10–20 ft. In mixed and pine forests on the hills between Chu-tong and Tai-ping-pu. Lat. 25° 30′ N. Long. 99° 48′ E. Alt. 8,000 ft. April 1922. N.W. Yunnan.

21142. **Vaccinium Forrestii,** Diels. Shrub of 10–15 ft. Flowers white, deeply flushed rose-crimson. Margins of shady forests on the hills between Sha-yang and Chu-tong. Lat. 25° 20′ N. Long. 99° 36′ E. Alt. 8,000 ft. April 1922. N.W. Yunnan.

21143. **Crataegus Henryi,** Dunn. Shrub of 20–30 ft. Flowers creamy-white. Openings in dense mixed and conifer forest on the hills between Sha-yang and Chu-tong. Lat. 25° 20′ N. Long. 99° 36′ E. Alt. 8–9,000 ft. April 1922. N.W. Yunnan.

21144. **Viburnum erubescens,** Wall. Shrub of 6–10 ft. Flowers fragrant, creamy-white faintly flushed rose on exterior. In open thickets by streams on the hills between Tai-ping-pu and Yang-pi. Lat. 25° 36′ N. Long. 99° 54′ E. Alt. 7–8,000 ft. April 1922. N. W. Yunnan.

21145. **Passiflora jugorum,** W. W. Sm. Scandent shrubby plant of 6–10 ft. Flowers greenish-yellow, anthers pale purple. Amongst dense scrub and fern on the plateau between Tengyueh and the Shweli. Lat. 25° 4′ N. Long. 98° 40′ E. Alt. 7,000 ft. April 1922. N.W. Yunnan.

21146. **Quercus** sp. aff. **Gilliana,** Rehd. et Wils. Shrub of 6–12 ft. In open thickets on the hills between the Lang-kong and Chien-Chuan valleys. Lat. 26° 20′ N. Long. 99° 54′ E. Alt. 7,000 ft. April 1922. N.W. Yunnan.

21148. **Cystacanthus yunnanensis,** W. W. Sm. Shrub of 3-7 ft. Flowers pale lavender or occasionally rose, with yellowish base. Open situations amongst scrub and by streams at the north end of the Tali valley. Lat. 25° 45′ N. Long. 100° 8′ E. Alt. 6,700 ft. May 1922. N.W. Yunnan.

21149. **Rosa.** Spinous semi-scandent shrub of 10-20 feet. Flowers fragrant, rose-pink, with a coppery tinge, on and amongst scrub and in thickets on the hills between the Langkong and Chien-Chuan valleys. Lat. 26° 20′ N. Long. 99° 45′ E. Alt. 7-8,000 ft. May 1922. N.W. Yunnan.

[= F. No. 21131.]

21150. **Draba yunnanensis,** Franch. Tufted plant of 3–6 inches. Flowers orange-yellow. Ledges and crevices of dry limestone cliffs on the hills north of Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 10,000 ft. March 1922. N.W. Yunnan.

21151. **Quercus spinosa,** David, vel aff. Spinous-leaved shrub of 3–5 ft. Amongst oak and mixed scrub on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. May 1922. N.W. Yunnan.

21152. **Quercus** sp. aff. **Gilliana,** Rehd. et Wils. Spinous-leaved shrub of 2–3 ft. In oak scrub on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 10,000 ft. May 1922. N.W. Yunnan.

21153. **Quercus** sp. aff. **Gilliana,** Rehd. et Wils. Spinous-leaved shrub of 2–3 ft. In oak scrub on the eastern flank of the Lichiang range. Lat. 27° 10′ N. Long. 100° 12′ E. Alt. 10,000 ft. May 1922. N.W. Yunnan.

21154. **Quercus** sp. aff. **semecarpifolia,** Sm. Matted, spinous-leaved shrub of 1 ft. Covering large areas of dry hillsides and in open pine forest on the eastern flank of the Lichiang range. Lat. 27° 10′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. May 1922. N.W. Yunnan.

21155. **Lonicera Koehneana,** Rehder. Shrub of 6–9 ft. Flowers orange-yellow, fragrant. Open thickets and scrub by streams on the hills north of Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 10,000 ft. April 1922. N.W. Yunnan.

21156. **Quercus semecarpifolia,** Sm. vel aff. Shrub of 12–25 ft. Leaves spinous. Forming thickets on the eastern flank of the Lichiang range. Lat. 27° 10′ N. Long. 100° 12′ E. Alt. 10,000 ft. May 1922. N.W. Yunnan.

21157. **Quercus** sp. aff. **Gilliana,** Rehd. et Wils. Shrub of 6–12 inches. Leaves spinous. Forming dense mats and covering large areas in the open and also in dry pine forests on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. May 1922. N.W. Yunnan.

21158. **Quercus** sp. aff. **Gilliana,** Rehd. et Wils. Spinous-leaved shrub of 2 ft. On dry rocky hillsides (and limy soil) on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. May 1922. N.W. Yunnan.

21159. **Quercus** sp. aff. **Gilliana,** Rehd. et Wils. Spinous-leaved shrub of 3–5 ft. In mixed scrub on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 10,000 ft. May 1922. N.W. Yunnan.

21162. **Crassulaceae.** Plant of 1–3 inches. Foliage fleshy, flowers ruddy, tinged green. Ledges of limestone cliffs in the Mekong valley. Lat. 25° 16′ N. Long. 99° 25′ E. Alt. 5–6,000 ft. April 1922. N.W. Yunnan.

21164. **Rosa.** Scandent, spinous shrub of 10–20 ft. Flowers fragrant, white tinged green centre. In cultivation around Lichiang. Lat. 27° N. Long. 100° 12′ E. Alt. 8–9,000 ft. May 1922. N.W. Yunnan.

21165. **Spiraea lichiangensis,** W. W. Sm. Shrub of 2–3 ft. Flowers creamy-white. Amongst scrub by streams on the hills S.W. of Lichiang. Lat. 26° 48′ N. Long. 100° 12′ E. Alt. 10,000 ft. May 1922. N.W. Yunnan.

21166. **Berberis elegans,** Schneid. Spinous shrub of 6–24 inches. Flowers orange-yellow. Open rocky slopes and on ledges of cliffs on the hills S.W. of Lichiang. Lat. 26° 48′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. May 1922. N.W. Yunnan.

21167. **Quercus aquifolioides,** Rehd. et Wils. var. **rufescens,** Rehd. et Wils. Spinous-leaved shrub of 2–4 ft. Dry situations amongst rocks in open pine forests on the hills S.W. of Lichiang. Lat. 26° 48′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. May 1922. N.W. Yunnan.

21168. **Trachicarpus excelsa,** Wendl. Plant of 12–25 ft. Flowers dull olive-yellow. Cultivated in the Lichiang and most valleys of W. and N.W. Yunnan. Fibre of leaf sheaths or bracts used in the manufacture of ropes, rain-covers, etc., etc. Similar to coir fibre. Lat. 27° N. Long. 100° 12′ E. Alt. to 10,000 ft. May 1922. N.W. Yunnan.

21169. **Pyrus.** Shrub or tree of 20–40 ft. In fruit. In thickets on the hills S.W. of Lichiang. Lat. 26° 48′ N. Long. 100° 12′ E. Alt. 9–10,000 ft. May 1921. N.W. Yunnan.

21170. **Quercus.** Shrub of 20–30 ft. In fruit. Open thickets by streams on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 10,000 ft. May 1922. N.W. Yunnan.

21171. **Spiraea sinobrahuica,** W. W. Sm. Shrub of 3–5 ft. Flowers creamy-white. Open stony slopes amongst rock and scrub and on ledges of dry cliffs on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 10–11,000 ft. May 1922. N.W. Yunnan.

21172. **Prunus.** Shrub of 15–30 ft. In fruit, immature. Thickets by streams and margins of mixed forests on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 10–11,000 ft. May 1922. N.W. Yunnan.

21173. **Viburnum flavescens,** W. W. Sm. Shrub of 5–7 ft. Flowers creamy-yellow. In thickets by streams and on rocky slopes on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 9–11,000 ft. May 1922. N.W. Yunnan.

21174. **Scabiosa Bretschneideri,** Batal. Plant of 1–1½ ft. Flowers rose-pink. Open stony slopes and pasture on the hills north of Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 8–9,000 ft. Aug. 1921. N.W. Yunnan.

21175. **Buddleia caryopteridifolia,** W. W. Sm. var. Shrub of 2–3 ft. Flowers fragrant, exterior grey, interior rose-lavender. Dry bouldery slopes on the hills north of Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 8,000 ft. Aug. 1921. N.W. Yunnan.

21176. **Desmodium praestans,** G. Forrest. Shrub of 5–8 ft. Flowers deep rose. In thickets on dry hillsides in gullies in the hills north of Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 7–8,000 ft. Aug. 1921. N.W. Yunnan.

21177. **Aster.** Plant of 18–20 inches. Ray florets pale lavender-blue, disc florets yellow. Dry, stony slopes on the hills north of Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 9–10,000 ft. May 1922. N.W. Yunnan.

21178. **Vitex yunnanensis,** W. W. Sm. Shrub of 6–9 ft. In fruit. In thickets on open dry slopes in side valleys on the hills north of Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 7–8,000 ft. Aug. 1921. N. W. Yunnan.

21179. **Lysimachii Franchetii,** Knuth, vel aff. Plant of 10–18 inches. Flowers golden-yellow. Open, dry, stony pasture and on the margins of thickets on the hills north of Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 8–9,000 ft. May 1922. N.W. Yunnan.

21180. **Habenaria acuifera,** Lindl. Plant of 8–14 inches. Flowers bright orange-yellow. Dry, stony pasture on the hills around Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 7–8,000 ft. Aug. 1921. N.W. Yunnan.

21182. **Bauhinia comosa,** Craib. Trailing, semi-scandent shrub of 10–15 ft. Flowers creamy-yellow. Thickets on the margins of streams on the hills around Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 6–7,000 ft. Aug. 1921. N.W. Yunnan.

[Duplicate from 1921.]

21183. **Rhabdothamnopsis sinensis,** Hemsl. var. **ochroleuca,** W. W. Sm. Plant of 3–8 inches. Flowers pale yellow. Dry, stony slopes and on ledges of limestone cliffs on the hills around Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 5–6,000 ft. July 1921. N. W. Yunnan.

[Duplicate from 1921.]

21184. **Desmodium rhabdocladum,** Franch. Shrub of 6-9 ft. Flowers creamy-yellow, occasionally faintly flushed rose. Margins of forests and in thickets on the hills around Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 6–7,000 ft. July 1921. N.W. Yunnan.

[Duplicate from 1921.]

21186. **Leptodermis glauca** (Franch.), Diels. Shrub of 2–3 ft. Flowers deep lavender. Open stony limestone slopes amongst scrub on the hills around Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 6–7,000 ft. May 1922. N.W. Yunnan.

21187. **Bauhinia** sp. aff. **densiflora,** Franch. Shrub of 6–10 ft. Flowers creamy-yellow. In thickets in dry side valleys on the hills around Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 5–7,000 ft. July 1921. N.W. Yunnan.

[Duplicate from 1921.]

21188. **Buddleia caryopteridifolia,** W. W. Sm. Shrub of 4–5 ft. Flowers fragrant, rose-lavender. In thickets on dry bouldery hillsides on the hills around Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 5–6,000 ft. July 1921. N.W. Yunnan.

[Duplicate from 1921.]

21189. **Wendlandia subalpina,** W. W. Sm. Dwarf shrub of 4–9 inches. Flowers creamy-yellow. Dry, stony pasture on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 7,000 ft. May 1922. N.W. Yunnan.

21190. **Cotinus nana,** W. W. Sm. Shrub of 1–2½ ft. Flowers pale pink. Dry, stony slopes on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 7–8,000 ft. May 1922. N.W. Yunnan.

21191. **Citrullus vulgaris,** Schrad. Trailing prostrate plant of 6–18 inches. Flowers yellow. Open, dry stony slopes on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 7–8,000 ft. May 1922. N.W. Yunnan.

21192. **Cotoneaster.** Shrub of 2–2½ ft. Flowers creamy-white. Amongst dwarf scrub on dry, stony slopes on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 8,000 ft. May 1922. N.W. Yunnan.

21193. **Cotinus Coggygria,** Scop. Shrub of 2–3 ft. In fruit. Amongst boulders on dry, stony slopes on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 7,000 ft. May 1922. N.W. Yunnan.

21194. **Bauhinia.** Shrub of 4–6 ft. Flowers creamy-white, veined and faintly flushed purplish-rose. In thickets in dry situations on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 6–7,000 ft. May 1922. N.W. Yunnan.

21196. **Rosa.** Spinous shrub of 9–12 ft. Branches arched. Flowers creamy-white, fragrant. Amongst scrub and in thickets on the hills S.W. of Lichiang. Lat. 26° 48′ N. Long. 100° 12′ E. Alt. 10,000 ft. May 1922. N.W. Yunnan.

21197. **Pyrus.** Shrub of 20–30 ft. In fruit. In mixed thickets on the mountains west of Lichiang-fu. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 10,000 ft. June 1922. N.W. Yunnan.

21199. **Rhus verniciflua,** Stokes. Tree of 30–40 ft. Flowers green, anthers orange. Open mixed forests on the hills S.W. of Lichiang-fu. Lat. 26° 45′ N. Long. 100° 12′ E. Alt. 9–10,000 ft. June 1922. N.W. Yunnan.

21200. **Quercus** sp. aff. **fenestrata,** Roxb. Tree of 30–50 ft. Open mixed forests on the hills S.W. of Lichiang-fu. Lat. 26° 45′ N. Long. 100° 12′ E. Alt. 9–10,000 ft. June 1922. N.W. Yunnan.

21201. **Celastrus spiciformis,** Rehd. et Wils. var. **laevis,** Rehd. et Wils. vel aff. Shrub of 6–12 ft. Branches arched, weakly trailing. In fruit. In thickets on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 12′ E. Alt. 9,000 ft. June 1922. N.W. Yunnan.

21202. **Betula Delavayi,** Franch. var. Shrub of 10–16 ft. In fruit. Open mixed thickets and on the margins of forests on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 12′ E. Alt. 9,000 ft. June 1922. N.W. Yunnan

21203. **Abelia brachystemon** (Diels). Shrub of 4–9 ft. Flowers white, faintly flushed purplish-rose on exterior, sweetly fragrant. In thickets and amongst scrub on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. June 1922. N.W. Yunnan.

21204. **Sageretia theezans,** Brongn. Spinous shrub of 4–8 ft. In fruit. Scrub clad slopes amongst boulders on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 12′ E. Alt. 10,000 ft. June 1922. N.W. Yunnan.

21205. **Rosa.** Spinous shrub of 3–6 ft. Branches arched. Flowers deep rose, base white or paler rose, faintly fragrant. Amongst scrub on open bouldery slopes and in open thickets on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 12′ E. Alt. 9–10,000 ft June 1922. N.W. Yunnan.

21206. **Mazus Delavayi,** Bonati. Plant of 1–3 inches. Flowers white, lined and flushed deep purple-rose exterior. Bed of dried up volcanic lake on the eastern flank of the Lichiang range. Lat. 27° N. Long. 100° 12′ E. Alt. 10,000 ft. June 1922. N.W. Yunnan.

21207. **Andrachne cordifolia,** Muell.-Arg. Shrub of 10–24 inches. Flowers green. Dry, rocky slopes on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 7–8,000 ft. June 1922. N. W. Yunnan.

21209. **Cynanchum** sp. aff. **Roylei,** Wight. Shrubby plant of 4–6 inches. Flowers white. Sandy, rocky slopes on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 6–7,000 ft. June 1922. N.W. Yunnan.

21210. **Prunus.** Shrub of 20–30 ft. In fruit. In open thickets by streams. Eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. June 1922. N. W. Yunnan.

21211. **Dioscorea Hemsleyi,** Prain et Burkill. Scandent plant of 2–4 ft. Flowers brown, scarious. Amongst rocks and on grass on dry slopes on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 6–7,000 ft. June 1922. N.W. Yunnan.

21212. **Quercus spinosa,** David, vel aff. Spinous-leaved shrub of 10–16 ft. Open mixed thickets on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 8,000 ft. June 1922. N.W. Yunnan.

21213. **Carduus crispus,** Linn. Plant of 6–14 inches. Flowers rose-pink. Clayey pasture by streams on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 9,000 ft. June 1922. N.W. Yunnan.

21217. **Quercus spinosa,** David, forma Shrub of 6–9 feet. Forming thickets on rocky slopes on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 7–8,000 ft. June 1922. N.W. Yunnan.

21218. **Quercus spinosa,** David, vel aff. Spinous-leaved shrub of 5–6 ft. In mixed thickets and forests on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 8,000 ft. June 1922. N.W. Yunnan.

21219. **Quercus spinosa,** David, vel aff. Spinous-leaved shrub of 12–18 ft. In oak forest on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 12′ E. Alt. 10,000 ft. June 1922. N.W. Yunnan.

21220. **Cynanchum sibiricum,** R. Br. vel aff. Scandent shrub of 4–6 ft. Flowers orange-yellow. On rocks and scrub in thickets on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 8,000 ft. June 1922. N.W. Yunnan.

21221. **Dicranostigma Franchetianum,** Fedde. Plant of 6–14 inches. Flowers orange. Open, stony pasture on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 9,000 ft. June 1922. N.W. Yunnan.

21222. **Daphne calcicola,** W. W. Sm. Shrub of 1–2 ft. Flowers fragrant, orange-yellow. Open rocky slopes on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 12′ E. Alt. 10,500 ft. June 1922. N.W. Yunnan.

21223. **Rhamnus** sp. aff **leptophyllus,** Schneid. Dwarf shrub of 1–3 ft. Flowers green. Open rocky slopes on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 12′ E. Alt. 10,500 ft. June 1922. N.W. Yunnan.

21224. **Cotoneaster.** Shrub of 4–6 ft. Flowers creamy-white. Open thickets and by streams on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 12′ E. Alt. 9–10,000 ft. June 1922. N.W. Yunnan.

21226. **Euonymus acanthocarpus,** Franch. Shrub of 10–18 ft. Flowers green. In open thickets on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. June 1922. N.W. Yunnan.

21227. **Primula lichiangensis,** G. Forrest, var. **hapala,** Balf. f. et Forrest. Plant of 8–12 inches. Flowers fragrant, dark purple-rose, eye orange. On ledges of dry limestone cliffs on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

21228. **Trollius pumilus,** D. Don. Plant of 3–5 inches. Flowers orange, nectaries saffron-red. Stony, moist, alpine pasture on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 13–14,000 ft. June 1922. S.W. Szechuan.

21229. **Draba yunnanensis,** Franch. Plant of 6–10 inches. Flowers bright yellow. On ledges of cliffs and stony pasture on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 14,000 ft. June 1922. S.W. Szechuan.

21230. **Meconopsis eximia,** Prain. Plant of 4–9 inches. Flowers deep indigo-purple, anthers grey-yellow. Limy alpine pasture on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 14,000 ft. June 1922. S.W. Szechuan.

21231. **Draba** sp. aff. **surculosa,** Franch. Plant of 9–14 inches. Flowers bright yellow. Open, stony slopes on ledges of limestone cliffs on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 12,000 ft. June 1922. S.W. Szechuan.

21232. **Euonymus taliensis,** Loesen. Shrub of 15–25 feet. Flowers deep maroon-crimson. Open thickets on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 11,000 ft. June 1922. S.W. Szechuan.

21233. **Primula gracilenta,** Dunn, forma. Plant of 6–14 inches. Flowers fragrant, deep purple. Open, moist meadows by streams on the mountains east of Yungning. Lat. 27° 50′ N. Long. 100° 50′ E. Alt. 13,000 ft. June 1922. S.W. Szechuan.

21234. **Primula florida,** Balf. f. et Forrest. Plant of 3–10 inches. Flowers fragrant, rose-lavender. Open stony slopes amongst scrub and on ledges of cliffs on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 11–12,000 ft. June 1922. S.W. Szechuan.

21235. **Ilex Delavayi,** Franch. Shrub of 2–3 feet. Flowers green. In thickets in side valleys on the mountains east of Yungning. Lat. 27° 45′ N. Long. 101° E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21236. **Primula effusa,** W. W. Sm. et Forrest. Plant of 6–12 inches. Flowers fragrant, rose, foliage fleshy, leathery. Shady, moist banks on slate formation on the descent to Feng-kou on the Yangtze. Lat. 27° 35′ N. Long. 100° 30′ E. Alt. 11,000 ft. May 1922. N.W. Yunnan.

[This is not the true *P. malacoides*. It was first collected in June 1913.]

21237. **Sageretia theezans,** Brongn. Shrub of 3–5 ft. In fruit. In thickets by streams on the mountains east of Yungning. Lat. 27° 45′ N. Long. 101° E. Alt. 9,000 ft. June 1922. S.W. Szechuan.

21238. **Fern.** Plant of 3–12 inches. Crevices and ledges of dry, shady limestone cliffs on the mountains east of Yungning. Lat. 27° 45′ N. Long. 101° E. Alt. 10,000 ft. June 1922. S.W. Szechuan.

21240. **Euonymus porphyreus,** Loesen. vel aff. Shrub of 20–25 ft. Flowers purple-maroon. In thickets by streams in side valleys on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 10,000 ft. June 1922. S.W. Szechuan.

21242. **Androsace spinulifera,** Knuth. Plant of 1–4 inches. Flowers rose, drying purple, tube yellow. Dry, stony lime pasture on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21243. **Polygonum Hookeri**, Meissn. Plant of 2–7 inches. Flowers dull crimson. Stony, grassy slopes and on ledges of cliffs on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 12,000 ft. June 1922. S.W. Szechuan.

21244. **Fraxinus chinensis**, Roxb. var. **acuminata**, Lingelsh. Shrub of 8–20 ft. In fruit. On thicket clad rocky slopes in ravines on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 9–10,000 ft. June 1922. S.W. Szechuan.

21245. **Rosa.** Very spinous shrub of 6–8 ft. Flowers rose deepest in bud, foliage fragrant. Open, dry situations amongst scrub on the mountains N.E. of Yungning. Lat. 27° 50′ N. Long. 100° 50′ E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

[Note the glands (!) also hairs on spines and the oblong fruits.]

21246. **Acer laxiflorum**, Pax, vel aff. Shrub of 20–30 ft. in fruit Thickets in side valleys on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21249. **Euonymus porphyreus**, Loesen. vel aff. Shrub of 20–35 ft. In fruit. In thickets in open situations on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 9,000 ft. June 1922. S.W. Szechuan.

21251. **Meconopsis Forrestii**, Prain. Plant of 9–16 inches. Flowers pale purplish-rose, anthers yellow. Open, stony meadows on the margins of thickets on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 13,000 ft. June 1922. S.W. Szechuan.

21254. **Omphalogramma vinciflora**, Franch. Plant of 8–12 inches. Flowers indigo-purple. Open alpine meadows and on the margins of pine forests on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

21255. **Morina chlorantha**, Diels. Plant of 6–12 inches. Flowers green. Open, alpine meadows on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 13,000 ft. June 1922. S.W. Szechuan.

21256. **Salix.** Dwarf shrub of 6–14 inches. In fruit. Stony, moist, alpine meadows on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 13,000 ft. June 1922. S.W. Szechuan.

21258. **Lychnis** sp. aff. **napuligera,** Franch. Plant of 9–12 inches. Flowers white. Stony alpine meadows and on ledges of cliffs on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 11–12,000 ft. June 1922. S.W. Szechuan.

21259. **Rhamnus.** Shrub of 2–3 ft. In fruit, fruits black. In scrub and thickets on the margins of streams on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 11,000 ft. June 1922. S.W. Szechuan.

21260. **Erysimum bracteatum,** W. W. Sm. Plant of 18–20 inches. Flowers deep ruddy orange. Amongst boulders and scrub on the margins of streams on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 9–10,000 ft. June 1922. S.W. Szechuan.

21261. **Pyrus.** Shrub of 15–25 ft. Flowers fragrant, creamy white. In thickets and on the margins of open forests on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21262. **Euonymus oresbius,** W. W. Sm. vel v. aff. Shrub of 3–5 ft. Flowers green. Open situations amongst boulders by streams on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21263. **Salix floccosa,** Burkill. Shrub of 8–12 inches. In fruit. Open bouldery alpine meadows on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 12,000 ft. June 1922. S.W. Szechuan.

21264. **Acer Davidi,** Franch. Shrub or tree of 25–40 ft. In fruit. In mixed forests on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21266. **Primula florida,** Balf. f. et Forrest. Plant of 2–6 inches. Flowers fragrant, deep purplish-rose, tube deepest. Moist, stony, alpine pasture on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 14,000 ft. June 1922. S.W. Szechuan.

21267. **Lonicera syringantha,** Maxim. var. Shrub of 3–5 ft. Flowers deep magenta-rose, tube darkest. Alpine scrub by streams and on the cliffs on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 11–12,000 ft. June 1922. S.W. Szechuan.

21268. **Acer caudatum,** Wall. var. Shrub or tree of 20–45 ft. Flowers greenish-yellow. In thickets and on the margins of mixed forests on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21269. **Rhynchosia** sp.? Prostrate plant of 2–2½ ft. Flowers green-orange. Barren, stony pasture on the hills around Feng-kou on the Yangtze. Lat. 27° 40′ N. Long. 100° 20′ E. Alt. 6,000 ft. June 1922. N.W. Yunnan.

21271. **Primula pseudosikkimensis,** G. Forrest. Plant of 8–14 inches. Flowers clear yellow. Alpine pasture on the divide between the Yangtze and the Yungning valleys. Lat. 27° 42′ N. Long. 100° 30′ E. Alt. 13,000 ft. June 1922. N.W. Yunnan.

21272. **Leptodermis Purdomii,** Hutchinson. Shrub of 3–4 ft. Flowers deep soft lavender. Amongst scrub by streams on the divide between the Yangtze and the Yungning valleys. Lat. 27° 42′ N. Long. 100° 30′ E. Alt. 10–11,000 ft. June 1922. N.W. Yunnan.

21273. **Buddleia eremophila,** W. W. Sm. Shrub of 2–3 ft. Flowers, exterior grey, interior purplish-rose. Open, dry situations amongst scrub on the divide between the Yangtze and Yungning valleys. Lat. 27° 42′ N. Long. 100° 30′ E. Alt. 6–7,000 ft. June 1922. N. W. Yunnan.

21277. **Trailliaedoxa gracilis,** W. W. Sm. et Forrest. Shrub of 1½–3 ft. Flowers creamy-white. Open dry slopes amongst scrub and boulders on the divide between the Yangtze and Yungning valleys. Lat. 27° 42′ N. Long. 100° 30′ E. Alt. 7,000 ft. June 1922. N.W. Yunnan.

21278. **Cryptolepis grandiflora,** Wight, vel aff. Scandent shrubby plant of 3–5 ft. Flowers greenish-white. On scrub and rocks in dry situations on the divide between the Yangtze and Yungning valleys. Lat. 27° 42′ N. Long. 100° 30′ E. Alt. 7,000 ft. June 1922. N.W. Yunnan.

21279. **Boerhaavia repens,** Linn. var. Trailing plant of 2–4 ft. Flowers yellowish-white. Amongst grass and scrub on stony slopes on the divide between the Yangtze and Yungning valleys. Lat. 27° 42′ N. Long. 100° 30′ E. Alt. 8–9,000 ft. June 1922. N.W. Yunnan.

21280. **Buddleia eremophila,** W. W. Sm. Shrub of 3 4 ft. Flowers grey exterior, interior pale lavender. Dry hillsides amongst scrub and rock on the hills above Feng-kou. Lat. 27° 40′ N. Long. 100° 26′ E. Alt. 6,000 ft. June 1922. N.W. Yunnan.

21281. **Cassiope selaginoides,** Hook. f. et Thoms. Matted plant of 2 4 inches. Flowers creamy-white, faintly flushed rose on exterior. On moist rocks, ledges of cliffs and rocky slopes on the divide between the Yangtze and Yungning valleys. Lat. 27° 42′ N. Long. 100° 30 E. Alt. 10–11,000 ft. June 1922. N.W. Yunnan.

21284. **Primula** sp. (A dwarf Nivalid). Plant of 1 2½ inches. Flowers fragrant, soft rosy lavender-blue. On moist, stony slopes and shady banks in side valleys on the divide between the Yungning and Yangtze valleys. Lat. 27° 42′ N. Long. 160° 30′ E. Alt. 11–12,000 ft. June 1922. N.W. Yunnan.

21285. **Primula secundiflora,** Franch. Plant of 10–14 inches. Flowers fragrant, deep purplish-rose. Stony, alpine meadows and grassy slopes on the divide between the Yungning and Yangtze valleys. Lat. 27° 42′ N. Long. 100° 30′ E. Alt. 12–13,000 ft. June 1922. N.W. Yunnan.

21286. **Paraquilegia microphylla,** Drumm. et Hutch. Cushion plant of 4 6 inches by 6–12 inches. Flowers lavender-purple, nectaries deep orange. On ledges and in crevices of limestone cliffs on the divide between the Yungning and Yangtze valleys. Lat. 27° 42′ N. Long. 100° 30′ E. Alt. 12–13,000 ft. June 1922. N.W. Yunnan.

21291. **Primula pulchelloides,** F. K. Ward. Plant of 9–15 inches. Flowers fragrant, purple-blue, tube green. Ledges of cliffs and dry rocky slopes on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

21293. **Primula sinoplantaginea,** Balf. f. Plant of 6-12 inches. Flowers dark blue-purple, tube darkest, fragrant. Open, moist, stony, alpine meadow on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 14,000 ft. June 1922. S.W. Szechuan.

21294. **Rubus Delavayi,** Franch. Spinous shrub of 1-2½ ft. Flowers white. Open rocky slopes amongst scrub and on the margins of thickets on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 12,000 ft. June 1922. S.W. Szechuan.

21296. **Oreorchis patens,** Lindl. Plant of 6–12 inches. Flowers fragrant, dull brownish-olive, flushed faintly exterior crimson, labellum spotted same. Margins of thickets in side valleys on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 11,000 ft. June 1922. S.W. Szechuan.

21300. **Caragana jubata,** Poir. Shrub of 2 ft. Flowers creamy yellow, standard lined and flushed crimson exterior. On screes and ledges of limestone cliffs on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

21302. **Fluggea** sp. aff. **microcarpa,** Blume. Shrub of 4–6 ft. Flowers green. Amongst scrub on dry hillsides in side valleys on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 9–10,000 ft. June 1922. S.W. Szechuan.

21303. **Primula szechuanica,** Pax. Plant of 9-18 inches. Flowers pale yellow. Open, moist, alpine meadows by streams on the mountains east of Yungning. Lat. 27° 40′ N. Long. 101° E. Alt. 13–14,000 ft. June 1922. S.W. Szechuan.

21307. **Prunus.** Shrub of 20–25 ft. In fruit. On cliffs and in mixed thickets on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 9–10,000 ft. June 1922. N.W. Yunnan.

21308. **Aristolochia Delavayi,** Franch. var. **micrantha,** W. W. Sm. Plant of 9-16 inches. Flowers deep brownish maroon. Whole plant has a foetid odour! Open, dry, stony slopes amongst scrub on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 7,000 ft. June 1922. N.W. Yunnan.

21309. **Parasyringa sempervirens,** W. W. Sm. Shrub of 6 9 feet. Evergreen. Flowers creamy-white, fragrant. Open thickets and dry rocky slopes on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. 10,000 ft. June 1922. N.W. Yunnan.

21310. **Pyrus.** Shrub of 20 40 ft. In fruit. In mixed thickets on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 10–11,000 ft. June 1922. N.W. Yunnan.

21311. **Cotoneaster.** Shrub of 3 5 ft. Flowers pink. Dry, rocky slopes amongst scrub on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 10–11,000 ft. June 1922. N.W. Yunnan.

21312. **Zizyphus montana,** W. W. Sm. Shrub or tree of 15–35 ft. In fruit. In mixed thickets by streams on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 10–11,000 ft. June 1922. N.W. Yunnan.

21314. **Castanopsis Delavayi,** Franch. Tree of 30–50 ft. Flowers creamy-yellow. Open, mixed forest on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 9,000 ft. June 1922. N.W. Yunnan.

21315. **Wikstroemia lichiangensis,** W. W. Sm. Shrub of 3–4½ feet. Flowers orange-yellow. Open, rocky slopes amongst scrub on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 9–10,000 ft. June 1922. N.W. Yunnan.

21316. **Quercus aquifolioides,** Rehd. et Wils. var. **rufescens** Rehd. et Wils. vel aff. Shrub of 4–6 ft. Leaves sparingly spinous. Scrub-clad rocky slopes on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 9–10,000 ft. June 1922. N.W. Yunnan.

21317. **Quercus aquifolioides,** Rehd. et Wils. vel aff. Shrub of 2–3 ft. Leaves sparingly spinous. Open pine forests on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 9,000 ft. June 1922. N.W. Yunnan.

21318. **Quercus semecarpifolia,** Sm. vel aff. Shrub of 20–35 ft. Leaves sparingly spinous. Oak and mixed thickets on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 9–10,000 ft. June 1922. N.W. Yunnan.

21319. **Quercus aquifolioides,** Rehd. et Wils. vel aff. Shrub of 3-5 ft. Leaves slightly spinous. Open oak thickets and on rocky dry slopes on the mountains S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 10–11,000 ft. June 1922. N.W. Yunnan.

21320. **Quercus semecarpifolia,** Sm. vel aff. Spinous-leaved shrub of 20-40 ft. In open oak and pine forest on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 9–11,000 ft. June 1922. N.W. Yunnan.

21322. **Quercus** sp. aff. **spicata,** Sm. Tree of 30–50 ft. In open mixed forests on the western flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 18′ E. Alt. 8–9,000 ft. June 1922. N.W. Yunnan.

21324. **Rhamnus** sp. aff. **leptophyllus,** Schneid. Dwarf matted shrub of 1–2 ft. In fruit. Open, dry, rocky slopes amongst scrub and on rocks on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 9–10,000 ft. June 1922. N.W. Yunnan.

21325. **Salix.** Shrub of 20 ft. Flowers pale yellow. In mixed scrub and thickets on the eastern flank of the Lichiang range. Lat. 27° 12′ N. Long. 100° 12′ E. Alt 11–12,000 ft. June 1922. N.W. Yunnan.

21326. **Primula chrysopa,** Balf. f. et Forrest. Plant of 9-14 inches. Flowers rose-lavender, tube green, fragrant. Moist, stony meadows by streams on the mountains east of Mu-li. Lat. 28° 18′ N. Long. 101° 6′ E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

21327. **Lancea tibetica,** Hook. f. et Thoms. Plant of 1 inch. Flowers deep indigo-purple. Open alpine pasture on the mountains N.E. of Mu-li. Lat. 28° 20′ N. Long. 101° 6′ E. Alt. 12-13,000 ft. June 1922. S.W. Szechuan.

21328. **Itea yunnanensis,** Franch. Shrub of 6–10 ft. Flowers greyish - white, racemes pendulous. Open thickets and on scrub-clad slopes on the mountains N.E. of Mu-li. Lat. 28° 20′ N. Long. 101° 6′ E. Alt. 7–8,000 ft. June 1922. S.W. Szechuan.

21329. **Iris.** Plant of 6-10 inches. Flowers deep ruddy purple, golden-grey, lacing on falls. Open moist meadows by streams on the mountains N.E. of Mu-li. Lat. 28° 20′ N. Long. 101° 6′ E. Alt. 11,000 ft. June 1922. S.W. Szechuan.

21330. **Koelreuteria paniculata,** Laxm. Dioecious tree of 30–40 feet. Flowers yellow with crimson on mid-petals. Open situations on margins of streams in the Litang valley, Mu-li district. Lat. 28° 20′ N. Long. 100° 48° E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21331. **Ranunculus affinis,** R. Br. var. Plant of 12–18 inches. Flowers golden-orange. Moist lush meadows by streams on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 11–12,000 ft. June 1922. S.W. Szechuan.

21332. **Primula oxygraphidifolia,** W. W. Sm. et Ward. Plant of 1½–2 inches. Flowers fragrant, deep lavender, tube white. Open, stony, moist, alpine meadows by streams on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long 101° 6′ E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

21333. **Braya Forrestii,** W. W. Sm. Tufted plant of 1–2 inches. Flowers white. Ledges and crevices of limestone cliffs and on screes on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 14,000 ft. June 1922. S.W. Szechuan.

21334. **Draba lichiangensis,** W. W. Sm. Plant of ½–1 inch. Flowers white. Crevices of limestone cliffs on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 14,000 ft. June 1922. S.W. Szechuan.

21335. **Cotoneaster.** Semi-prostrate shrub of 1–2 ft. Flowers rose. Stony meadows and amongst scrub on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 11–12,000 ft. June 1922. S.W. Szechuan.

21336. **Primula rupicola,** Balf. f. et Forrest. Plant of 2–7 inches. Flowers fragrant, deep purplish-blue, tube white. Shady ledges of limestone cliffs and amongst scrub at the base of same on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 13,000 ft. June 1922. S.W. Szechuan.

21337. **Acer Forrestii,** Diels. Shrub or tree of 20–40 ft. Flowers dull olive-yellow. In thickets and mixed forests on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 9–10,000 ft. June 1922. S.W. Szechuan.

21338. **Euonymus Semenovii,** Regel et Herd. Shrub of 6-10 ft. Flowers dull greenish-crimson. In shady side valleys amongst rocks and scrub on the mountains around Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 11,000 ft June 1922. S.W. Szechuan.

21340. **Quercus** sp. aff. **Gilliana,** Rehd. et Wils. Spinous-leaved shrub of 2 ft. Flowers olive-yellow, tinged red. Open stony slopes in dry side valleys on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 10,000 ft. June 1922. S.W. Szechuan.

21341. **Euonymus taliensis,** Loesen. Shrub of 15-25 feet. Flowers deep maroon. In thickets by streams in side valleys on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21342. **Euonymus Monbeigii,** W. W. Sm. Tree of 20-45 ft. Flowers white (?). In fruit. In mixed forests on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21343. **Spiraea mollifolia,** Rehd. Shrub of 2–3 ft. Flowers creamy-white. On ledges of limestone cliffs and humus-covered boulders in side valleys on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 12,000 ft. June 1922. S.W. Szechuan.

21346. **Meliosma cuneifolia,** Franch. Shrub of 10–25 ft. Flowers immature (!). In thickets by streams on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 10,000 ft. June 1922. S.W. Szechuan.

21349. **Abelia gracilenta,** W. W. Sm. var. **microphylla,** W. W. Sm. Shrub of 2–5 ft. Flowers pale pink. Open, dry hillsides amongst scrub and boulders on the divide between the Yungning and Yangtze valleys. Lat. 27° 42′ N. Long. 100° 30′ E. Alt. 7–8,000 ft. June 1922. N.W. Yunnan.

21350. **Cotoneaster.** Shrub of 6-9 ft. Flowers (?) white. Open scrub on dry hillsides on the divide between the Yungning and Yangtze valleys. Lat. 27° 42′ N. Long. 100° 30′ E. Alt. 7–9,000 ft. June 1922. N. W. Yunnan.

21352 **Primula brevifolia,** G. Forrest. Plant of 8–12 inches. Flowers deep purplish-blue. Moist alpine meadows by streams on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 14,000 ft. June 1922. S.W. Szechuan.

21353. **Anaphalis rhododactyla,** W. W. Sm. forma. Matted plant of 2–3 inches. Flowers deep rose-pink. Open, moist, stony, alpine meadows on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 14–14,500 ft. June 1922. S.W. Szechuan.

21354. **Cassiope selaginoides,** Hook. f. et Thoms. Matted plant of 4–6 inches. Flowers white. Open moist banks amongst scrub and on rocks and boulders on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 13–14,000 ft. June 1922. S.W. Szechuan.

21355. **Fraxinus chinensis,** Roxb. var. **acuminata,** Lingelsh. Shrub of 20–30 ft. In fruit. On cliffs and in thickets in side valleys on the mountains N.E. of Mu-li. Lat. 28° 22′ N. Long. 101° 6′ E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21356. **Chelonopsis.** Shrub of 3–5 ft. Flowers creamy-white, flushed purple exterior. Thickets by streams in the Litang Ho valley. Lat. 28° 12′ N. Long. 100° 54′ E. Alt. 8–9,000 ft. June 1922. S.W. Szechuan.

21357. **Rhus verniciflua,** Stokes. Tree of 30–50 ft. Flowers olive-yellow. Open situations by streams in the Litang Ho valley. Lat. 28° 12′ N. Long. 100° 54′ E. Alt. 8–9,000 ft. June 1922. S.W. Szechuan.

21359. **Primula lichiangensis,** G. Forrest, forma. Plant of 6–12 inches. Flowers soft purplish-rose, eye green. Ledges of cliffs and rocky slopes amongst scrub in side valleys on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 11,000 ft. June 1922. S.W. Szechuan.

21360. **Luzula effusa,** Buchenau. Plant of 9–15 inches. Ledges of cliffs and grassy slopes amongst scrub in side valleys on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 11–12,000 ft. June 1922. S.W. Szechuan.

21361. **Primula Prattii,** Hemsl. Plant of 3–10 inches. Flowers yellow. On open, dry, stony, alpine pasture and ledges of limestone cliffs on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

21362. **Panax bipinnatifida,** Seem. Plant of 1½–2½ feet. Flowers green. Open, shady situations amongst scrub and on the margins of mixed forests on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21363. **Juniperus formosana,** Hayata. Shrub or tree of 10–35 ft. On open, rocky, alpine slopes in scattered thickets on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 12–13,000 ft. June 1922. S. W. Szechuan.

21364. **Primula chungensis,** Balf. f. et Ward. Plant of 10–18 inches. Flowers rich buff-yellow, fragrant. Open, moist pasture by streams on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 9–10,000 ft. June 1922. S.W. Szechuan.

21365. **Quercus** sp. aff. **spinosa,** David. Spinous-leaved shrub or tree of 20–45 ft. Flowers brownish-yellow. In mixed and oak forest in side valleys on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 9–10,000 ft. June 1922. S.W. Szechuan.

21366. **Caragana jubata,** Poir. Semi-prostrate shrub of 1–2 ft. Flowers creamy-white, flushed pinkish-purple, standard margined and lined deeper. On dry rocky slopes and ledges of limestone cliffs on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

21367. **Osmanthus Forrestii,** Rehder. Evergreen shrub of 15–25 ft. In fruit, fruits deep purple. In thickets by streams and margins of mixed forests on the mountains S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 11,000 ft. June 1922. N.W. Yunnan.

21368. **Moss.** (Infertile.) Forming mats on shaded damp rocks in mixed forests on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 12,000 ft. June 1922. N.W. Yunnan.

21370. **Iris.** Plant of 12–18 inches. Flowers deep wine-purple, anthers pale yellow, falls marbled grey-yellow. Open moist situations by streams in pine forest on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 11–12,000 ft. June 1922. S.W. Szechuan.

21371. **Primula sinoplantaginea,** Balf. f. Plant of 7–12 inches. Flowers deep blue-purple, fragrant. Moist, stony meadows on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

21372. **Rhamnus** sp. aff. **leptophyllus,** Schneid. Shrub of 6–9 ft. In fruit. In thickets by streams in side valleys on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 10,000 ft. June 1922. S.W. Szechuan.

21373. **Iris.** Plant of 2½–3 ft. Flowers fragrant, light yellow, falls marked pale purple-blue. Margins of streams and marshy meadows on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21374. **Lloydia tibetica,** Baker, var. **purpurascens,** Franch. Plant of 6–9 inches. Flowers pale yellow, interior base orange, exterior washed and lined purplish-brown. Moist, stony, alpine slopes on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 13–14,000 ft. June 1922. S.W. Szechuan.

21378. **Primula szechuanica,** Pax. Plant of 12–16 inches. Flowers pale yellow. Open boggy meadows and by streams on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 13–14,000 ft. June 1922. S.W. Szechuan.

21379. **Pedicularis** sp. aff. **longepetiolata,** Franch. Plant of 14–18 inches. Flowers rose, beak darkest. Open, sandy meadows on the margins of thickets on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

21381. **Mazus.** Plant of 1–2½ inches. Flowers white or white faintly stained purple. Moist clay meadows on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21382. **Primula pulchella,** Franch. Plant of 9–12 inches. Flowers purple-blue, eye greenish-yellow, fragrant. On moist, alpine, stony meadows on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

21383. **Primula muliensis,** Hand.-Mzt. [*Primula Coryana*, Balf. f. et Forrest.] Plant of 12–16 inches. Flowers fragrant, fleshy, soft rosy-purple, throat and tube yellowish-grey, farina on under surface of foliage aromatic. Margins of shady forests and thickets and in open meadows on the mountains E. of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 11–12,000 ft. June 1922. S.W. Szechuan.

21384. **Scopolia lurida,** Duval. Plant of 2–2½ ft. Flowers dull purplish-olive. Open situations on the margins of thickets and amongst scrub on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 11,000 ft. June 1922. S.W. Szechuan.

21385. **Anaphalis.** Tufted plant of 4–7 inches. Flowers white. Open, stony meadows and slopes on the mountains N. E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

21386. **Iris.** Plant of 12–20 inches. Flowers fragrant, deep indigo purple, falls marked grey, bracts ruddy purple. Open alpine meadows on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 13,000 ft. June 1922. S.W. Szechuan.

21388. **Cremanthodium suave,** W. W. Sm. Plant of 4–10 inches. Bracts bluey-green, florets pale olive-yellow. Stony alpine meadows amongst rocks on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 14–15,000 ft. June 1922. S.W. Szechuan.

21389. **Anaphalis.** Tufted plant of 3–7 inches. Flowers white. Stony meadows and on screes on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 14,000 ft. June 1922. S.W. Szechuan.

21393. **Primula yunnanensis,** Franch. Plant of 2–3½ inches. Flowers fragrant, purplish-rose. Humus-covered boulders and ledges of cliffs on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 10,000 ft. June 1922. S.W. Szechuan.

21394. **Ajuga sciaphila,** W. W. Sm. Semi-creeping plant of 4–9 inches. Flowers blue. In shady pine forests among rocks on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21395. **Primula sinopurpurea,** Balf. f. Plant of 8–12 inches. Flowers deep bluish-purple, fragrant. Open, stony, alpine slopes on the mountains E. of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

21396. **Iris.** Plant of 3–5 inches. Flowers deep ruddy-purple. Open stony meadows on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 12,000 ft. June 1922. S.W. Szechuan.

21397. **Solms-Laubachia pulcherrima,** Muschler. Cushion plant of 6–8 inches diameter, 2 inches in height. Flowers soft rose, calyces and pedicels purplish-rose. Open, moist, stony alpine meadows and on ledges of cliffs on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 14,000 ft. June 1922. S.W. Szechuan.

21398. **Croton** sp. aff. **caudatus,** Geisel. Shrub of 4–6 ft. Flowers greenish-yellow. Open thickets in the Litang valley around Mu-li. Lat. 28° 12′ N. Long. 100° 54′ E. Alt. 9,000 ft. June 1922. S.W. Szechuan.

21399. **Pedicularis densispica,** Franch. Plant of 10–14 inches. Flowers rose, beak lightest. Open moist meadows and on the margins of thickets on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21401. **Picea likiangensis,** Pritzel. Tree of 40–70 ft. Forming forests on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 10–12,000 ft. June 1922. S.W. Szechuan.

21402. **Triglochin maritimum,** Linn. Plant of 14–20 inches. In fruit. Marshy meadows on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21403. **Illigera mollissima,** W. W. Sm. Shrubby semi-scandent plant of 4–6 ft. Flowers olive-brown. Amongst boulders and scrub in dry situations in the Litang valley. Lat. 28° 12′ N. Long. 100° 54′ E. Alt. 9,000 ft. June 1922. S.W. Szechuan.

21407. **Mandragora caulescens,** Clarke. Plant of 6–10 inches. Flowers dull livid green. Open, stony pasture on slopes on the mountains E. of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 12,000 ft. June 1922. S.W. Szechuan.

21411. **Primula Dubernardiana,** G. Forrest. Cushion plant, 1–2 ft. diameter, 3–6 inches in height. Flowers white (?). On the ledges and in crevices of dry limestone cliffs on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

[I cannot vouch for colour, may be rose, as flowers of species of that section bleach in drying.]

21412. **Triglochin maritimum,** Linn. var. Plant of 12–20 ins. Flowers pale grey-yellow. Marshy meadows on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 10,000 ft. June 1922. S.W. Szechuan.

21413. **Primula muliensis,** Hand.-Mzt. [*Primula Coryana,* Balf. f. et Forrest.] Plant of 12–18 inches. Flowers fragrant, soft rosy-purple, throat and tube yellowish-grey, farina on under surface of foliage peculiarly aromatic. Margins of forests and amongst scrub in side valleys on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 12,000 ft. June 1922. S.W. Szechuan.

21414. **Vernonia** sp.? Shrub of 3–5 ft. Flowers dull orange-yellow. Amongst scrub on dry rocky hillsides on the mountains E. of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 10,000 ft. June 1922. S.W. Szechuan.

21415. **Aster yunnanensis,** Franch. Plant of 9–12 inches. Ray florets deep lavender-purple, disc florets ruddy orange. Stony alpine meadows on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 11–12,000 ft. June 1922. S.W. Szechuan.

21416. **Primula conica,** Balf. f. et Forrest. Plant of 12–18 inches. Flowers fragrant, deep purplish-blue. Open meadows and in thickets by streams on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 12,000 ft. June 1922. S.W. Szechuan.

21418. **Megacarpaea Delavayi,** Franch. Plant of 1½–2½ ft. Flowers fragrant, white, flushed or stained magenta-rose. Open situations amongst scrub by streams and on the margins of thickets on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 11–12,000 ft. June 1922. S.W. Szechuan.

21419. **Aconitum** sp. (Immature.) Plant of 6–10 ins. Flowers dull creamy-yellow, flushed and slightly veined dull green on exterior. Open alpine meadows on the margins of scrub on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 13–14,000 ft. June 1922. S.W. Szechuan.

21420. **Tilia chinensis,** Maxim. var. Shrub or tree of 20–50 ft. Flowers creamy-yellow. Open thickets and in mixed forests on the mountains east of Yungnng. Lat. 27° 48′ N. Long. 101° E. Alt. 11,000 ft. June 1922. S.W. Szechuan.

21421. **Wedelia urticaefolia,** DC. Plant of 1–3 ft. Flowers orange-yellow. Amongst scrub on open dry slopes on the western flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 18′ E. Alt. 9–10,000 ft. June 1922. N.W. Yunnan.

21422. **Quercus** sp. aff. **glauca,** Thunb. Shrub or tree of 20–40 ft. In fruit. Open thickets and mixed forests on the western flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 18′ E. Alt. 9,000 ft. June 1922. N.W. Yunnan.

21423. **Cinnamomum Wilsonii,** Gamble, vel aff. Shrub of 15–25 ft. Flowers (?). Foliage aromatic. Open mixed thickets on the western flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 18′ E. Alt. 8,000 ft. June 1922. N.W. Yunnan.

21425. **Primula malvacea,** Franch. var. **intermedia,** W. W. Sm. et Forrest. Plant of 4–10 inches. Flower rose. Open, stony slopes and on cliffs and rocks in dry side valleys on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 9–10,000 ft. June 1922. S.W. Szechuan.

21427. **Saussurea.** Plant of 14–18 inches. Flowers (?) probably yellow. Open, stony pasture on the margins of thickets and forests on the western flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 18′ E. Alt. 10–11,000 ft. June 1922. N.W. Yunnan.

21428. **Keteleeria Davidiana,** Beiss. Shrub or tree of 30–50 ft. In mixed forests on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 8–10,000 ft. June 1922. N.W. Yunnan.

21429. **Hemerocallis nana,** Forrest et W. W. Sm. Plant of 7–10 inches. Flowers ruddy orange, brownish on exterior. Amongst rocks on grassy slopes on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 10–11,000 ft. June 1922. N.W. Yunnan.

21430. **Prunus tomentosa,** Thunb. Shrub of 8–14 ft. Generally branched from base. In fruit. Fruits large, edible, though bitter, white or pale pinkish-red. Forming thickets on rocky slopes and on the margins of forests on the eastern flank of the Lichiang range. Lat. 27° 35′ N. Long. 100° 14′ E. Alt. 11,000 ft. June 1922. N.W. Yunnan.

21432. **Pleione Henryi,** Rolfe. Plant of 2–3 inches. Flowers deep rose with darker markings. Shady moss-clad rocks and slopes in ravines on the mountains S.E. of Yungning. Lat. 27° 40′ N. Long. 100° 48′ E. Alt. 10,000 ft. June 1922. S.W. Szechuan.

21433. **Quercus variabilis,** Blume. Shrub or tree of 25–50 ft. In fruit. In oak and mixed forests in the mountains S.E. of Yungning. Lat. 27° 40′ N. Long. 100° 48′ E. Alt. 9–10,000 ft. June 1922. S.W. Szechuan.

21434. **Corydalis** sp. aff. **Wilsoni,** N. E. Br. Plant of 4–8 inches. Flowers orange. Limy screes and ledges of limestone cliffs on the mountains S.E. of Yungning. Lat. 27° 40′ N. Long. 100° 48′ E. Alt. 11,000 ft. June 1922. S.W. Szechuan.

21435. **Primula Dubernardiana,** G. Forrest, var. Cushion plant of 12–20 inches diameter, 4–6 inches in height. Flowers white (?). Ledges of limestone cliffs on the western flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 12′ E. Alt. 12,000 ft. June 1922. N.W. Yunnan.

21437. **Roscoea Chamaeleon,** Gagnep. vel aff. Plant of 4–8 inches. Flowers deep bright yellow, centre orange. Limy pasture and on screes on the mountains N.E. of Yungning. Lat. 27° 40′ N. Long. 100° 48′ E. Alt. 11,000 ft. June 1922. S.W. Szechuan.

21438. **Primula russeola,** Balf. f. et Forrest. Plant of 5–9 inches. Flowers deep indigo-purple, tube ruddy, fragrant. On limy, peaty pasture amongst dwarf scrub and on ledges of cliffs on the mountains S.E. of Yungning. Lat. 27° 40′ N. Long. 100° 48′ E. Alt. 12,000 ft. June 1922. S.W. Szechuan.

21439. **Aster likiangensis,** Franch. Plant of 4–8 inches. Ray florets deep lavender-blue, disc florets ruddy orange. Open alpine meadows and slopes on the mountains S.E. of Yungning. Lat. 27° 40′ N. Long. 100° 48′ E. Alt. 12–13,000 ft. June 1922. S.W. Szechuan.

21440. **Sedum.** Cushion plant of 4–6 inches. Flowers crimson. Forming bosses in crevices and on ledges of limestone cliffs and on screes on the mountains S.E. of Yungning. Lat. 27° 40′ N. Long. 100° 48′ E. Alt. 14–15,000 ft. June 1922. S.W. Szechuan.

21441. **Androsace spinulifera,** Knuth. Plant of 14–16 inches. Flowers purplish-rose. Margins of conifer and mixed forests on the mountains S.E. of Yungning. Lat. 27° 40′ N. Long. 100° 48′ E. Alt. 14–15,000 ft. June 1922. S.W. Szechuan.

21443. **Tremacron Forrestii,** Craib. Plant of 4–8 inches. Flowers pale yellow. On boulders and dry cliffs in shady side valleys on the mountains S.E. of Yungning. Lat. 27° 40′ N. Long. 100° 48′ E. Alt. 11,000 ft. July 1922. S.W. Szechuan.

21444. **Acer Franchetii,** Pax. Shrub or tree of 25–40 ft. In fruit. In mixed forests in side valleys on the mountains S.E. of Yungning. Lat. 27° 40′ N. Long. 100° 48′ E. Alt. 11,000 ft. July 1922. S.W. Szechuan.

21445. **Prunus.** Shrub or tree of 20–45 ft. In immature fruit. Mixed forests and thickets on the mountains S.E. of Yungning. Lat. 27° 40′ N. Long. 100° 48′ E. Alt. 10–11,000 ft. June 1922. S.W. Szechuan.

21447. **Roscoea Chamaeleon,** Gagnep. Plant of 10–14 inches. Flowers fleshy, deep rose-purple. Stony meadows amongst rocks and on the margins of thickets on the mountains S.E. of Yungning. Lat. 27° 40′ N. Long. 100° 48′ E. Alt. 11,000 ft. June 1922. S. W. Szechuan.

21448. **Lilium Delavayi,** Franch. Plant of 2–3½ ft. Amongst scrub and boulders on the margins of thickets on the mountains S.E. of Yungning. Lat. 27° 40′ N. Long. 100° 48′ E. Alt. 10–11,000 ft. July 1922. S.W. Szechuan.

21449. **Clematis trullifera,** Finet et Gagnep. Scandent shrub of 6–14 ft. Flowers deep creamy-yellow. On scrub by streams on the mountains S.E. of Yungning. Lat. 27° 40′ N. Long. 100° 48′ E. Alt. 11–12,000 ft. June 1922. S.W. Szechuan.

21450. **Nomocharis Mairei,** Lévl. Plant of 1½–3 ft. Flowers fleshy, satiny white, blotched and marbled crimson-purple. Amongst scrub and on the margins of thickets on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 11–12,000 ft. July 1922. S.W. Szechuan.

21452. **Cydonia.** Shrub of 20–25 ft. In fruit. In mixed forests and thickets on the eastern flank of the Lichiang range. Lat. 27° 10′ N. Long. 100° 12′ E. Alt. 9,000 ft. July 1922. N.W. Yunnan.

21453. **Hemerocallis nana,** Forrest et W. W. Sm. Plant of 6–8 inches. Flowers deep orange, exterior brownish. Open pasture on the margins of oak forests on the eastern flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 12′ E. Alt. 11,000 ft. June 1922. N. W. Yunnan.

21455. **Allium.** Plant of 6–9 inches. Flowers pale yellow. Open alpine meadows on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 14,000 ft. June 1922. S.W. Szechuan.

21457. **Prunus.** Shrub or tree of 20–35 ft. In fruit, fruits crimson. In mixed thickets on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 11,000 ft. July 1922. S.W. Szechuan.

21458. **Pittosporum heterophyllum,** Franch. Shrub of 3–5 ft. In fruit. Rocky, scrub-clad slopes on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21459. **Acalypha szechuanensis,** Hutch. var. Shrub of 4–6 ft. Flowers olive-green. Open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40 E. Alt. 7–8,000 ft. July 1922. N. W. Yunnan.

21460. **Vaccinium spicigerum,** W. W. Sm. Shrub of 3–6 ft. In fruit, fruits dull crimson. Open thickets and on the margins of forests amongst rock on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. July 1922. N.W. Yunnan.

21461. **Schima argentea,** Pritzel, vel aff. Shrub of 9–20 ft. Flowers creamy-white. In open thickets and mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. July 1922. N.W. Yunnan.

21464. **Celastrus.** Semi-scandent shrub of 6–10 ft. In fruit. In thickets and amongst scrub by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 9,000 ft. July 1922. N.W. Yunnan.

21465. **Spiraea sinobrahuica,** W. W. Sm. Shrub of 2–3 ft. Flowers white. Dry, rocky slopes and on cliffs on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

21466. **Parasyringa sempervirens,** W. W. Sm. Shrub of 3–6 ft. Flowers creamy-white, fragrant. Dry, open, rocky slopes amongst scrub on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 7–9,000 ft. July 1922. N.W. Yunnan.

21467. **Chionanthus.** Shrub of 20–30 ft. In fruit. In thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 7–8,000 ft. July 1922. N.W. Yunnan.

21468. **Pyrus.** Shrub of 10–18 ft. Flowers deep crimson. Shady situations in side valleys and in mixed thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

21469. **Rosa.** Spinous, weakly scandent shrub of 10–16 ft. Flowers fragrant, creamy-white. In thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21471. **Pterocarya Forrestii,** W. W. Sm. Shrub or tree of 25–50 ft. In fruit. Open mixed and conifer forests on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N. W. Yunnan.

21472. **Sabia yunnanensis,** Franch. Scandent shrub of 10–16 ft. In fruit, fruits darkest. In thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21473. **Zanthoxylum** sp. aff. **oxyphyllum,** Edgew. Weakly scandent, spinous shrub of 20 ft. In fruit. Amongst scrub and in thickets on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

21474. **Primula muscarioides,** Hemsl. var. Plant of 9–14 inches. Flowers deep ruddy-blue-purple, fragrant. Moist meadows by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 11,000 ft July 1922. N.W. Yunnan.

21477. **Aralia chinensis,** Linn. var. **glabrescens,** Schneider. Shrub of 12–20 ft. Flowers greenish-yellow. In thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 9,000 ft. July 1922. N.W. Yunnan.

21479. **Primula sikkimensis,** Hook. Plant of 12–16 inches. Flowers fragrant, soft yellow, drying green! Shady situations amongst dwarf scrub by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

[Is this *sikkimensis*, *pseudo-sikkimensis*, or an intermediate form or species? I have never known the true *pseudo-sikkimensis* to dry green, though normally the type does so.]

21480. **Primula amethystina,** Franch. Plant of 6–9 inches. Flowers fragrant, deep soft blue-purple, foliage fleshy. Open moist alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. July 1922. N.W. Yunnan.

[Probably the type *amethystina* which was collected by Père Delavay in that region, slightly south.]

21481. **Viburnum betulifolium,** Batal. Shrub of 4–6 ft. Flowers creamy-white. Open scrub and thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21482. **Rhamnus Sargentianus,** Schneid. vel v. aff. Shrub of 6–12 ft. In fruit. Open thickets and on the margins of forests on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

21484. **Primula bella,** Franch. Matted plant of 1–2 inches. Flowers deep rosy-purple. Moist, sandy, peaty pasture on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. July 1922. N.W. Yunnan.

21486. **Rubus.** Spinous shrub of 5–7 ft. In fruit, fruits scarlet. Open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11,000 ft. July 1922. N.W. Yunnan.

21489. **Hemerocallis plicata,** Stapf. Plant of 9–16 inches. Flowers deep orange, exterior brownish. Ledges of limestone cliffs and on scrub-clad slopes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

21491. **Salix cheilophila,** Schneid. Shrub of 10–15 ft. By streams in shady situations on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

21493. **Cotoneaster.** Shrub of 1½–3 ft. Flowers crimson. On dry rocky slopes and ledges of limestone cliffs on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12,000 ft. July 1922. N.W. Yunnan.

21494. **Ligustrum** sp. aff. **Delavayanum,** Hariot. Shrub of 5–9 ft. Flowers creamy-white, fragrant. In open thickets by streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21495. **Anemone flaccida,** F. Schmidt. Plant of 4–7 inches. Flowers white. In open scrub and thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21496. **Androsace Delavayi,** Franch. Matted plant of 1 inch. Flowers white or rose. Forming mats from a few inches to several feet in extent on moist, stony, alpine moorland and on rocks and cliffs on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. July 1922. N.W. Yunnan.

21497. **Primula aurantiaca,** W. W. Sm. et Forrest. Plant of 7–10 inches. Flowers deep ruddy orange. Moist, alpine pasture by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11,000 ft. July 1922. N.W. Yunnan.

21498. **Primula maikhaensis,** Balf. f. et Forrest. Plant of 2–4 inches. Flowers soft deep rose. Shady situations on ledges of cliffs and humus-covered boulders in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30° N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21499. **Saxifraga geifolia,** Balf. f. Plant of 5–12 inches. Foliage fleshy. Flowers white. On shady banks and moss-covered rocks and cliffs in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

21500. **Meconopsis betonicifolia,** Franch. Plant of 2–2½ ft. Flowers soft clear blue, anthers orange. On open rocky alpine meadows by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan. Also under No. 21573 from the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

21501. **Primula aurantiaca,** W. W. Sm. et Forrest. Plant of 8–12 inches. Flowers orange. Moist alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

[May be same species as F. No: 21497.]

21502. **Photinia glomerata,** Rehd. et Wils. Shrub of 20 35 ft. In immature fruit. In open thickets and on the margins of forests on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9–10,000 ft July 1922. N.W. Yunnan.

21503. **Euonymus tingens,** Wall. Shrub of 15–20 ft. Flowers creamy-white, veined purplish-crimson. In thickets and on the margins of mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21504. **Cremanthodium nobile** (Franch.), Diels, var. Plant of 9–13 inches. Flowers fragrant, ray florets golden-yellow, disc florets orange. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. July 1922. N. W. Yunnan.

21505. **Plectranthus** sp. aff. **rugosus,** Wall. Shrub of 2 ft. Flowers pale blue. Open, stony slopes amongst dwarf scrub and herbage on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

21508. **Aralia.** Slender-stemmed shrub of 6–10 ft. In fruit. Shady situations in thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21509. **Leptodermis** sp. aff. **Wilsoni,** Hort. Kew. Shrub of 12–18 inches. Flowers deep lavender. Shady, stony situations amongst dwarf scrub and herbage in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

21510. **Lonicera yunnanensis,** Franch. Weakly scandent shrub of 10–14 ft. Flowers non-fragrant, pale yellow. On scrub on the margins of conifer and mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

21511. **Cornus oblonga,** Wall. Shrub of 6–12 ft. In fruit. Margins of thickets and forests on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21513. **Evodia rutaecarpa,** Hook. f. et Thoms. vel v. aff. Shrub of 10 ft. Flowers immature. In thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21514. **Cydonia.** Shrub of 20 ft. In fruit, immature. Open mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

[= Forrest No. 21452.]

21515. **Magnolia.** Shrub of 6–10 ft. Foliage only. Cultivated in a lamasery on the eastern flank of the Lichiang range. Lat. 27° 10′ N. Long. 100° 12′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21517. **Gardneria angustifolia,** Wall. Semi-scandent shrub of 6–9 ft. Flowers, interior yellow, exterior green. Amongst scrub on the margins of shady thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21518. **Clematis montana,** Ham. var. Weakly scandent shrub of 8–12 ft. Flowers creamy-white, faintly flushed purplish on exterior. On scrub on the margins of thickets on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11,000 ft. July 1922. N.W. Yunnan.

21519. **Rosa.** Spinous clambering shrub of 12–18 ft. Flowers white, fragrant. In thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21520. **Ternstroemia japonica,** Thunb. var. **Wightii,** Dyer. Shrub of 10–18 ft. Flowers fleshy, creamy-yellow. Margins of mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9,000 ft. July 1922. N.W. Yunnan.

21521. **Actinidia venosa,** Rehd. et Wils. Weakly scandent shrub of 10–20 ft. Flowers dull crimson margined creamy-yellow. Fruits edible. On scrub in mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21522. **Actinidia** sp. aff. **callosa,** Lindl. Scandent shrub of 20–25 ft. In immature fruit. On trees in mixed thickets on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 7,000 ft. July 1922. N.W. Yunnan.

21523. **Kadsura Roxburghiana,** Arn. Weakly scandent shrub of 20 ft. Flowers fleshy, dull creamy-yellow, flushed purplish. On trees and scrub in mixed thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. July 1922. N.W. Yunnan.

21524. **Schizandra sphenanthera,** Rehd. et Wils. Scandent shrub of 10–25 ft. Flowers brownish-yellow. On trees in thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

21525. **Solms-Laubachia pulcherrima,** Muschler. Tufted plant of 2½–5 inches. Flowers lavender-rose. Open, stony, moist meadows and on ledges of cliffs on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. July 1922. N.W. Yunnan.

21526. **Incarvillea grandiflora,** Franch. var. vel aff. Plant of 1½–2 ft. Flowers pale rose. Openings in thickets and amongst scrub on alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

21527. **Roscoea Chamaeleon,** Gagnep. Plant of 10–14 inches. Flowers canary-yellow. On open rocky meadows and amongst scrub on the margins of forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

21530. **Cardamine Griffithii,** Hook. f. et Thoms. Plant of 2 2½ ft. Flowers rose-red. Moist shady situations in thickets and amongst scrub by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. July 1922. N.W. Yunnan.

21535. **Vaccinium Donianum,** Wight. Shrub of 4-7 ft. In fruit. Open thickets on rocky slopes in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 25′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

21536. **Polygonum Hookeri,** Meissn. Plant of 12–16 inches. Flowers deep crimson. On lush alpine pasture on the Chien-chuan-Mekong divide. Lat. 26° 25′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. July 1922. N.W. Yunnan.

21537. **Eurya japonica,** Thunb. var. **aurescens,** Rehd. et Wils. Shrub of 3–6 ft. In fruit. Amongst dense scrub in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 25′ N. Long. 99° 40′ E. Alt. 7–8,000 ft. July 1922. N.W. Yunnan.

21538. **Populus szechuanica,** Schneid. vel v. aff. Tree of 40–70 ft. In fruit. In mixed open forest by streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

21540. **Marsdenia oreophila,** W. W. Sm. vel v. aff. Scandent shrub of 9–15 ft. Flowers (?). On scrub by streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8 9,000 ft. July 1922. N.W. Yunnan.

21541. **Orchis basifoliata** (Finet), Schltr. Plant of 7–10 inches. Flowers rose, marked a deeper shade. In long grass on the margins of moist meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

21542. **Veronica pirolaeformis,** Franch. Plant of 4–9 inches. Flowers pale purplish-rose. Open stony meadows on the margins of conifer forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. July 1922. N.W. Yunnan.

21543. **Meconopsis lancifolia,** Franch. Plant of 7–12 inches. Flowers deep satiny-purple, anthers yellowish-grey. Open alpine meadows and amongst dwarf scrub on the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 12,000 ft. July 1922. N.W. Yunnan.

21544. **Euonymus amygdalifolius,** Franch. Shrub of 12–18 ft In fruit. In thickets by streams on the Chien-chuan Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21545. **Primula yunnanensis,** Franch. Plant of 1–2½ inches. Flowers soft rose-lavender. On dry limestone rocks and cliffs on the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21548. **Primula anisodora,** Balf. f. et Forrest. Plant of 16–24 inches. Flowers deep purple-crimson, eye greenish-yellow. Foliage very faintly aromatic (!). Open moist situations amongst scrub by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. July 1922. N.W Yunnan.

21550. **Pyrus.** Shrub of 20 ft. Flowers creamy-white. In dense thickets in gullies on the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 11,000 ft July 1922. N.W. Yunnan.

21552. **Lycium chinense,** Mill. Spinous shrub of 3–5 ft. Flowers purple, deepest at base, with greenish margins. By streams on the lower slopes of the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 8–9,000 ft. July 1922. N.W. Yunnan.

21553. **Juniperus recurva,** Ham. Shrub of 4–6 ft. In fruit. Open hillsides amongst rocks on the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

21554. **Zanthoxylum.** Spinous, weakly scandent shrub of 9–12 ft. In fruit. Open thickets by streams on the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21555. **Veronica pirolaeformis,** Franch. Plant of 4–9 inches. Flowers pale purple-lavender. Stony slopes amongst scrub on the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 11,000 ft. July 1922. N. W. Yunnan.

21556. **Primula malvacea,** Franch. Plant of 9–14 inches. Flowers lavender-rose, eye greenish-yellow. Open alpine meadows on the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

21557. **Primula malvacea,** Franch. var. **alba,** Forrest. Plant of 9–14 ins. Flowers fragrant, pure white with yellowish eye and tube. Open alpine meadows on the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

21558. **Senecio koualapensis,** Franch. Plant of 1–2 ft. Flowers immature, probably yellow. Open alpine meadows and on the margins of conifer forests on the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

21561. **Podoon Delavayi,** H. Baill. ♂ Plant of 1–2 ft. Flowers immature (!) greenish-yellow. Open meadows on the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21562. **Habenaria glaucifolia,** Bur. et Franch. Plant of 12–18 inches. Flowers green, fleshy. Open alpine meadows on the Sung-kwei range. Lat. 26° 18′ N. Long 100° 12′ E. Alt. 11,000 ft. July 1922. N.W. Yunnan.

21566. **Cremanthodium nobile** (Franch.), Diels. Plant of 8–12 inches. Flowers strongly fragrant. Ray florets golden-yellow, disc florets brownish-orange. Open alpine meadows on the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 12,000 ft. July 1922. N.W. Yunnan.

21567. **Meliosma pungens,** Wall. Shrub of 10–20 ft. In fruit. In thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 45′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21568. **Scrophularia nodosa,** Linn. (ex Franch.). Plant of 12–14 inches. Flowers green. Ledges of cliffs and stony meadows on the Chien-chuan-Mekong divide. Lat. 26° 45′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

21571. **Sedum yunnanense,** Franch. var. **Forrestii,** R. Hamet. Plant of 7–12 inches. Flowers deep greenish-purple, anthers yellow. Ledges and crevices of cliffs on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13,000 ft. July 1922. N.W. Yunnan.

21572. **Cotoneaster.** Shrub of 9–13 ft. Flowers creamy-white. In thickets amongst boulders and by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11,000 ft. July 1922. N.W. Yunnan.

21573. **Meconopsis betonicifolia,** Franch. Plant of 2–2½ ft. Flowers soft clear blue, anthers orange. On open rocky alpine meadows on the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

[See also F. No. 21500.]

21574. **Pentapanax Leschenaultii,** Seem. Loosely branched shrub of 10–15 ft. Flowers immature, pale greenish-yellow (?). Dense thickets by streams in side valleys on the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

21575. **Rosa.** Spinous shrub of 5–8 ft. In fruit. Flowers creamy-white, fragrant. In open thickets on rocky slopes in side valleys on the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 11-12,000 ft. July 1922. N.W. Yunnan.

21576. **Meconopsis lancifolia,** Franch. Plant of 10–15 inches. Flowers deep clear blue-purple, anthers grey-yellow. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 45′ N. Long. 99° 40′ E. Alt. 13,000 ft. July 1922. N.W. Yunnan.

21578. **Lilium Delavayi,** Franch. forma. Plant of 18–24 ins. Flowers solitary, occasionally two, fragrant, rich golden-yellow, minutely spreckled pale purple. In half shade in mixed and oak forests in side valleys on the Yangtze-Mekong (Chien-chuan-Mekong) divide. Lat. 26° 40′ N. Long. 99° 42′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

21579. **Cephalotaxus sinensis,** Rehd. et Wils. Shrub of 10 40 feet. In fruit. Open thickets by streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. July 1922. N.W. Yunnan.

21580. **Skimmia melanocarpa,** Rehd. et Wils. Shrub of 20 ft. In fruit. In open thickets on the flanks of side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. July 1922. N.W. Yunnan.

21590. **Sedum purpureoviride,** Praeger. Plant of 18–20 inches. Flowers coppery-green. Open rocky alpine meadows and on screes on the mountains N.E. of Mu-li. Lat. 28° 24′ N. Long. 101° 6′ E. Alt. 13,000 ft. June 1922. S.W. Szechuan.

21591. **Primula nutans,** Franch. Plant of 6–14 inches. Flowers fragrant, purplish-blue. In open mixed and conifer forests on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 11,000 ft. June 1922. S.W. Szechuan.

21592. **Meconopsis rudis,** Prain, var. Plant of 7–14 inches. Flowers ruddy purple, anthers orange. Open alpine moorland on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 12,000 ft. June 1922. S.W. Szechuan.

21593. **Prunus.** Shrub of 20–35 ft. In fruit, fruits crimson. In mixed forests on the Salwin-Kiu Chiang divide, west of Si-chi-to. Lat. 28° 16′ N. Long. 98° 30′ E. Alt. 11,000 ft. May 1922. Tsarong, S.E. Tibet.

21594. **Lindera** sp. aff. **cercidifolia,** Hemsl. Shrub of 15–20 ft. Flowers fragrant, yellow. In mixed thickets in side valleys on the Salwin-Kiu Chiang divide, west of Si-chi-to. Lat. 28° 20′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. May 1922. Tsarong, S.E. Tibet.

21595. **Betula utilis,** D. Don, var. Shrub of 12–25 ft. Flowers yellow. Open thickets by streams in side valleys on the Salwin-Kiu Chiang divide, west of Si-chi-to. Lat. 28° 20′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. May 1922. Tsarong, S.E. Tibet.

21596. **Agapetes** sp. aff. **Bulleyana,** Diels. Shrub of 1½–3 ft. Flowers green lined crimson. Shady situations in forests on banks and rocks occasionally epiphytic in side valleys and ravines on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 9–10,000 ft. May 1922. Tsarong, S.E. Tibet.

21597. **Agapetes Lacei,** Craib. Epiphytic, pendulus shrub of 1–2½ feet. Flowers scarlet-crimson. On trees in shady forests on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10,000 ft. June 1922. Tsarong, S.E. Tibet.

21598. **Maddenia hypoxantha,** Koehne. Shrub of 12–20 ft. Flowers fragrant, orange-brown. In thickets by streams in side valleys on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10,000 ft. May 1922. Tsarong, S.E. Tibet.

21599. **Acer cappadocicum,** Gleditsch, var. **sinicum,** Rehd. Shrub of 20–25 ft. Flowers pale yellowish-green. In mixed thickets in side valleys on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 10–11,000 ft. May 1922. Tsarong, S.E. Tibet.

21600. **Holboellia latifolia,** Wall. ♀ Scandent shrub of 8–12 ft. Flowers creamy-yellow, fleshy. On scrub in shady ravines on the Salwin-Kiu Chiang divide, N. W. of Si-chi-to. Lat. 28° 24′ N. Long. 98° 24′ E. Alt. 9,000 ft. May 1922. Tsarong, S.E. Tibet.

21601. **Picrasma quassioides,** Benn. Shrub of 10–20 feet. Flowers dark green. In thickets by streams and on the margins of mixed forests on the Londre La, Salwin-Mekong divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 10,000 ft. May 1922. Tsarong, S.E. Tibet.

21602. **Prunus** sp. aff. **Dielsiana,** Schneid. Shrub of 15–30 ft. Flowers pale pink. In mixed thickets and forests on the Londre La, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 10–10,500 ft. May 1922. Tsarong, S.E. Tibet.

21603. **Prunus.** Shrub of 20–35 ft. Flowers fragrant, white. In thickets by streams on the Yangtze-Mekong divide, near Da-mu-chong. Lat. 27° 18′ N. Long. 99° 48′ E. Alt. 9,000 ft. March 1922. N.W. Yunnan.

21604. **Euptelea pleiosperma,** Hook. f. et Thoms. Shrub of 20–25 ft. Flowers brown. In open thickets by streams and in shady moist gullies on the Yangtze-Mekong divide, near Da-mu-chong. Lat. 27° 18′ N. Long. 99° 48′ E. Alt. 9,000 ft. March 1922. N.W. Yunnan.

21605. **Ulmus.** Shrub of 10–25 ft. Flowers ruddy green. In open thickets and amongst rocks on the Yangtze-Mekong divide, near Da-mu-chong. Lat. 27° 18′ N. Long. 99° 48′ E. Alt. 10,000 ft. March 1922. N. W. Yunnan.

21606. **Syringa Potaninii,** Schneid. Shrub of 8–16 ft. Flowers fragrant, pale creamy-rose. In thickets by streams on the Yangtze-Mekong divide, near Da-mu-chong. Lat. 27° 18′ N. Long. 99° 48′ E. Alt. 8,000 ft March 1922. N.W. Yunnan.

21607. **Quercus variabilis,** Blume. Shrub of 20–30 ft. Flowers dull yellow. In mixed thickets on dry, rocky hill-sides on the Yangtze-Mekong divide, near Da-mu-chong. Lat. 27° 18′ N. Long. 99° 48′ E. Alt. 8,000 ft. March 1922. N.W. Yunnan.

21608. **Populus** sp. (Male flowers only). Shrub or tree of 30–60 ft. In mixed forests on the Londre La, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 10–11,000 ft. May 1922. Tsarong, S.E. Tibet.

21609. **Berberis Jamesiana,** Forrest et W. W. Sm. Spinous shrub of 6–9 ft. Branches arched. Flowers dark yellow. Open rocky hillsides amongst mixed scrub on the Londre La, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 10–11,000 ft. May 1922. Tsarong, S.E. Tibet.

21610. **Prunus discadenia,** Koehne. Shrub of 20–35 feet. Flowers white. In mixed forests on the Londre La, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 10–11,000 ft. May 1922. Tsarong, S.E. Tibet.

21611. **Prunus tomentosa,** Thunb. Shrub of 5–10 ft. Flowers white. In thickets in ravines on Londre La, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 11–12,000 ft. May 1922. Tsarong, S.E. Tibet.

21612. **Euonymus Monbeigii,** W. W. Sm. Shrub of 15–30 ft. Flowers green. In thickets in ravines on Londre La, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 11,000 ft. May 1922. Tsarong, S.E. Tibet.

21613. **Davidia involucrata,** Baill. var. **Vilmoriniana,** Hemsl. Shrub or tree of 30–40 ft. Flowers greenish-yellow, bracts creamy-white. Open mixed forests on the Salwin-Kiu Chiang divide, N.W. of Chamatong. Lat. 28° 16′ N. Long. 98° 30′ E. Alt. 10–11,000 ft. June 1922. Tsarong, S.E. Tibet.

21614. **Euonymus porphyreus,** Loesen. Shrub of 7–10 ft. Flowers pale dull greenish-purple. Amongst scrub by streams on the Salwin-Kiu Chiang divide, N.W. of Chamatong. Lat. 28° 16′ N. Long. 98° 30′ E. Alt. 11,000 ft. June 1922. Tsarong, S.E. Tibet.

21615. **Magnolia rostrata,** W. W. Sm. Tree of 30–60 ft. Flowers white, fragrant. In mixed forests on the Salwin-Kiu Chiang divide, N.W. of Chamatong. Lat. 28° 16′ N. Long. 98° 30′ E. Alt. 11–12,000 ft. June 1922. Tsarong, S.E. Tibet.

21616. **Magnolia nitida,** W. W. Sm. Widely branched evergreen tree of 30–40 ft. Flowers fragrant, creamy-white. In mixed thickets and forests on the Salwin-Kiu Chiang divide, N.W. of Chamatong. Lat. 28° 16′ N. Long. 98° 30′ E. Alt. 11–12,000 ft. June 1922. Tsarong, S.E. Tibet.

21617. **Viburnum cordifolium,** Wall. Shrub of 4–5 ft. Flowers creamy-yellow. Scrubby rocky slopes in side valleys on the Salwin-Kiu Chiang divide, N.W. of Chamatong. Lat. 28° 20′ N. Long. 98° 30′ E. Alt. 11–12,000 ft. May 1922. Tsarong, S.E. Tibet.

21618. **Spiraea hypericifolia,** Linn. forma. Shrub of 2–3 ft. Flowers pure white. On humus covered rocks and ledges of cliffs in ravines on the Salwin-Kiu Chiang divide, N.W. of Chamatong. Lat. 28° 20′ N. Long. 98° 30′ E. Alt. 12,000 ft. May 1922. Tsarong, S.E. Tibet.

21619. **Acer Davidi,** Franch. Shrub of 20–30 ft. Flowers greenish-yellow. Open mixed forests on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 30′ N. Long. 98° 18′ E. Alt. 11,000 ft. May 1922. Tsarong, S.E. Tibet.

21620. **Symplocos Forrestii,** W. W. Sm. Shrub of 20 ft Flowers yellow. In mixed thickets by streams in sheltered side valleys on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 30′ N. Long. 98° 18′ E. Alt. 9–10,000 ft. May 1922. Tsarong, S.E. Tibet.

21621. **Euonymus** sp. aff. **theifolius,** Wall. Shrub of 10–20 ft. Flowers olive-green. In thickets in sheltered side valleys on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 30′ N. Long. 98° 18′ E. Alt. 10,000 ft. May 1922. Tsarong, S.E. Tibet.

21622. **Acer Campbellii,** Hook. f. et Thoms. var. **yunnanensis,** Rehd. Shrub of 25–40 ft. Flowers dark brownish-green. In mixed forests in side valleys on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 30′ N. Long. 98° 18′ E. Alt. 11–12,000 ft. May 1922. Tsarong, S.E. Tibet.

21623. **Corylopsis yunnanensis,** Diels. Shrub of 10 feet. Flowers greenish-yellow. In mixed thickets on open hillsides and by streams in ravines on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 30′ N. Long. 98° 18′ E. Alt. 11,000 ft. May 1922. Tsarong, S.E. Tibet.

21624. **Heptapleurum venulosum,** Seem. v. aff. Scandent shrub of 10–30 ft. In fruit. In thickets on trees and scrub in ravines on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 30′ N. Long. 98° 18′ E. Alt. 10,000 ft. June 1922. Tsarong, S.E. Tibet.

21625. **Elaeocarpus Braceanus,** Watt. Shrub or tree of 20–40 ft. In fruit, fruits black. In mixed forest in the Salwin valley at Chamatong. Lat. 28° 12′ N. Long. 98° 33′ E. Alt. 6–7,000 ft. May 1922. Tsarong, S.E. Tibet.

21626. **Acer salweenense,** W. W. Sm. Shrub or tree of 20–50 ft. Flowers light yellowish-green. In mixed forests on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 30′ N. Long. 98° 18′ E. Alt. 10,000 ft. May 1922. Tsarong, S.E. Tibet.

21627. **Morus alba,** Linn. ♂ Shrub of 20–30 ft. Flowers green. In thickets in side valleys on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 30′ N. Long. 98° 30′ E. Alt. 11,000 ft. May 1922. Tsarong, S.E. Tibet.

21628. **Viburnum cordifolium,** Wall. var. Shrub of 10–12 ft. Flowers creamy-yellow. In alpine thickets on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt. 12–13,000 ft. June 1922. Tsarong, S.E. Tibet.

21629. **Lindera** sp.? Shrub of 7 12 ft. Flowers fragrant, greenish-yellow. Mixed thickets by streams in sheltered side valleys on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 30′ E. Alt. 10–11,000 ft. Tsarong, S.E. Tibet.

21630. **Acer tetramerum,** Pax, var. Shrub of 10 20 ft. Flowers greenish-yellow. In thickets in side valleys on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt. 11,000 ft. May 1922. Tsarong, S.E. Tibet.

21631. **Rosa.** Spinous weakly-scandent shrub of 8-10 feet. Flowers deep crimson rose. In open thickets by streams on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt. 10,000 ft. May 1922. Tsarong, S.E. Tibet.

21632. **Primula eucyclia,** W. W. Sm. et Forrest. Plant of ½–2½ inches. Perennial flowers pale shell pink, eye yellowish. On rocks and stony alpine meadows on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt. 14,000 ft. May 1922. Tsarong, S.E. Tibet.

[= F. No. 19868. 1921.]

21633. **Primula Dickieana,** Watt, var. **Pantlingii** (King). Plant of 2–4 inches. Flowers deep lavender-blue, eye yellow, fragrant. Open moist alpine meadows on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt. 14–14,500 ft. May 1922. Tsarong, S.E. Tibet.

21634. **Prunus mugus,** Hand.-Mzt. Shrub of 3–9 ft. Flowers pink. Forming thickets on rocky slopes on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt. 12–13,000 ft. May 1922. Tsarong, S.E. Tibet.

21635. **Tupistra chinensis,** Baker. Plant of 1½ ft. Flowers creamy-yellow. Shady thickets and by streams in the Salwin valley north of Chamatong. Lat. 28° 18′ N. Long. 98° 30′ E. Alt. 6,000 ft. May 1922. Tsarong, S.E. Tibet.

21636. **Ribes glaciale,** Wall. Shrub of 3–6 ft. Flowers deep maroon-crimson. On rocky alpine meadows on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt. 14,000 ft. May 1922. Tsarong, S.E. Tibet.

21637. **Primula Agleniana,** Balf. f. et Forrest, forma. Plant of 10–14 inches. Flowers fragrant, creamy-yellow, flushed rose exterior. On moist alpine meadows and by streams on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt. 14,500 ft. May 1922. Tsarong, S.E. Tibet.

21638. **Viburnum erubescens,** Wall. Shrub of 7–10 ft. Branches arched. Flowers semi-pendulous, white fragrant. In thickets by streams in side valleys on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 30′ E. Alt. 10–11,000 ft. May 1922. Tsarong, S.E. Tibet.

21639. **Lysimachia** sp. aff. **pumila,** Franch. Plant of 1½–3 inches. Flowers pale pink. On moist alpine meadows by streams on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 30′ E. Alt. 12,000 ft. May 1922. Tsarong, S.E. Tibet.

21640. **Phaius** sp. aff. **grandifolius,** Lour. Plant of 2½–3½ ft. Flowers fleshy, golden-yellow, fragrant. In scrub and open thickets by streams in the Salwin valley near Si-K'ai. Lat. 27° 48′ N. Long. 98° 36′ E. Alt. 6,000 ft. June 1922. Tsarong, S.E. Tibet.

21641. **Calanthe densiflora,** Lindl. vel v. aff. Plant of 1–2 ft. Flowers (?). In fruit. Open shady thickets and by streams in the Salwin valley near Si-K'ai. Lat. 27° 48′ N. Long. 98° 36′ E. Alt. 6,000 ft. June 1922. Tsarong, S.E. Tibet.

21642. **Primula yunnanensis,** Franch. Plant of 1–1½ inches. Flowers fragrant, pale purple-rose, tube darkest. On cliffs and humus-covered boulders in shady side valleys on the Salwin-Kiu Chiang divide, west of Si-K'ai. Lat. 27° 48′ N. Long. 98° 36′ E. Alt. 10–11,000 ft. June 1922. Tsarong, S.E. Tibet.

21643. **Primula calliantha,** Franch. forma. Plant of 3–5 inches. Flowers fleshy, fragrant, soft deep rose. Open moist alpine meadows on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 30′ E. Alt. 14,000 ft. June 1922. Tsarong, S.E. Tibet.

21644. **Magnolia rostrata,** W. W. Sm. Shrub or tree of 35–50 ft. Flowers fragrant, white. Forming thickets and in open forests on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 30′ E. Alt. 11,000 ft. June 1922. Tsarong, S.E. Tibet.

21645. **Acer Wardii,** W. W. Sm. Shrub of 20–35 ft. Flowers greenish-maroon. In open thickets and forests by streams in side valleys on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 11,000 ft. June 1922. Tsarong, S.E. Tibet.

21646. **Vaccinium oreotrephes,** W. W. Sm. Shrub of 6–16 inches. Flowers dark rose. Open moist alpine rocks and meadows on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 14–14,500 ft. June 1922. Tsarong, S.E. Tibet.

21647. **Enkianthus variegatus,** G. Forrest, MSS. Shrub of 10–20 ft. Flowers dull creamy-yellow, lined faintly rose. Foliage dull light green, veined and marbled dull yellow. In thickets and on rocky slopes in side valleys on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 11–12,000 ft. June 1922. Tsarong, S.E. Tibet.

21648. **Styrax.** Shrub of 20–30 ft. Flowers fragrant, white. Open thickets by streams on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt. 10–11,000 ft. June 1922. Tsarong, S.E. Tibet.

21649. **Viola pinnata,** Linn. Plant of 2–4 inches. Flowers white, faintly lined blue at base. Shady situations in and on the margins of thickets on the Londre La, Salwin-Mekong divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 11–12,000 ft. May 1922. Tsarong, S.E. Tibet.

21650. **Premna interrupta,** Wall. vel v. aff. Shrub of 10–20 ft. Foliage and flowers faintly aromatic. Flowers white. In thickets on open rocky hillsides on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 8,000 ft. June 1922. Tsarong, S.E. Tibet.

21651. **Ficus.** Shrub of 15–25 ft. Thickets in the Salwin valley, west of Chamatong. Lat. 28° 18′ N. Long. 98° 30′ E. Alt. 6–7,000 ft. June 1922. Tsarong, S.E. Tibet.

21652. **Viola Forrestiana,** W. Becker. Plant of 3–5 inches. Flowers white, fragrant. Alpine thickets and by streams on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 12–13,000 ft. June 1922. Tsarong, S.E. Tibet.

21653. **Tussilago Farfara,** Linn. Plant of 4–9 inches. Flowers fragrant, golden-yellow. In open thickets by streams on the Yangtze-Mekong divide, near Da-mu-chong. Lat. 27° 18′ N. Long. 99° 48′ E. Alt. 9,000 ft. March 1922. N.W. Yunnan.

21654. **Enkianthus.** Shrub of 4–6 ft. Flowers green. In thickets and on the margins of conifer forests on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 26′ E. Alt. 11–12,000 ft. June 1922. Tsarong, S.E. Tibet.

21655. **Geranium Robertianum,** Linn. Plant of 2–5 inches. Flowers rose. In dwarf cane brakes on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 26′ E. Alt. 11–12,000 ft. June 1922. Tsarong, S.E. Tibet.

21656. **Enkianthus.** Shrub of 6–9 ft. Flowers green, heavily flushed rose. Open conifer forests and in cane brakes on the Sie La, Mekong-Salwin divide. Lat. 28° N. Long. 98° 47′ E. Alt. 13,000 ft. June 1922. N.W. Yunnan.

21657. **Primula dumicola,** W. W. Sm. et Forrest. Plant of 4–12 inches. Flowers fragrant, rose, eye yellowish-white. Margins of thickets by streams near Hsi-ku on the descent from the Londre La to the Salwin valley, Salwin-Mekong divide. Lat. 28° 14′ N. Long. 98° 38′ E. Alt. 11,000 ft. May 1922. Tsarong, S.E. Tibet.

21658. **Enkianthus.** Shrub of 10–15 ft. Flowers dull yellow, heavily margined and lined soft rose-crimson. In conifer and mixed forests on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 26′ E. Alt. 10–11,000 ft. June 1922. Tsarong, S.E. Tibet.

21659. **Botrychium virginianum,** Sw. Plant of 16–20 inches. In thickets in side valleys on the Salwin-Kiu Chiang divide, west of Si-K'ai. Lat. 27° 46′ N. Long. 98° 33′ E. Alt. 10,000 ft. June 1922. Tsarong, S.E. Tibet.

21660. **Disporum pullum,** Salisb. Plant of 1½–2 ft. Flowers white. Shady situations in mixed and conifer forests on the Salwin-Kiu Chiang divide, west of Si-K'ai. Lat. 27° 46′ N. Long. 98° 33′ E. Alt. 10–11,000 ft. June 1922. Tsarong, S.E. Tibet.

21661. **Ribes laurifolium,** Jancz. ♂ Shrub of 3–6 ft. Flowers green, brownish at base. On the margins of and in thickets in side valleys on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 11,000 ft. June 1922. Tsarong, S.E. Tibet.

21662. **Dipentodon sinicus,** Dunn. Shrub of 14–20 ft. Flowers dull yellow. In thickets by streams in side valleys on the Salwin-Kiu Chiang divide, west of Si-K'ai. Lat. 27° 46′ N. Long. 98° 33′ E. Alt. 10,000 ft. June 1922. Tsarong, S.E. Tibet.

21663. **Ilex micrococca,** Maxim. Shrub of 20 ft. Flowers creamy-yellow. In thickets by streams in side valleys on the Salwin-Kiu Chiang divide west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 10,000 ft. June 1922. Tsarong, S.E. Tibet.

21664. **Prunus.** Shrub of 20–25 ft. Flowers white. Open thickets in side valleys on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 11,000 ft. June 1922. Tsarong, S.E. Tibet.

21665. **Pyrus.** Shrub of 12–24 ft. Flowers creamy-white. In thickets and on the margins of mixed forests on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 11–12,000 ft. June 1922. Tsarong, S.E. Tibet.

21666. **Prunus.** Shrub of 12–20 ft. Flowers immature. In thickets by streams on the Salwin-Kiu Chiang divide, west of Si-K'ai. Lat. 27° 46′ N. Long. 98° 33′ E. Alt. 10–11,000 ft. June 1922. Tsarong, S.E. Tibet.

21667. **Mucuna.** Scandent shrub of 20–35 ft. Flowers black-crimson. On trees in thickets on the Salwin-Kiu Chiang divide, west of Si-K'ai. Lat. 27° 46′ N. Long. 98° 33′ E. Alt. 7,000 ft. June 1922. Tsarong, S.E. Tibet.

21668. **Eriobotrya tengyuehensis,** W. W. Sm. vel aff. Shrub of 20–25 ft. Flowers creamy-yellow. In thickets in side valleys of the Salwin-Kiu Chiang divide, north of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt. 7,000 ft. June 1922. Tsarong, S.E. Tibet.

21669. **Tinospora** sp.? ♂ Scandent shrub of 20–30 ft. Flowers olive-green. On trees in thickets by streams in side valleys on the Salwin-Kiu Chiang divide, north of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt 8–9,000 ft. June 1922. Tsarong, S.E. Tibet.

21670. **Viburnum** sp. aff. **atrocyaneum,** Clarke. Shrub of 6–10 ft. Flowers creamy-white. In thickets by streams on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt. 7–9,000 ft. June 1922. Tsarong, S.E. Tibet.

21671. **Acer Forrestii,** Diels, forma. Shrub of 18–25 ft. Flowers purplish-red. In thickets by streams on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt. 12,000 ft. June 1922. Tsarong, S.E. Tibet.

21672. **Acer cappadocicum,** Gleditsch, var. **sinicum,** Rehd. Shrub of 25–35 ft. Flowers yellowish-green. In open thickets and forests on the Londre La, Salwin-Mekong divide. Lat. 28° 14′ N. Long. 98° 40′ E. Alt. 12,000 ft. May 1922. Tsarong, S.E. Tibet.

21673. **Taiwania cryptomerioides,** Hayata. Tree of 60–70 ft. Diameter five feet from ground fully 6 ft. In forests in side valleys on the Salwin-Kiu Chiang divide, N. W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt. 8,000 ft. June 1922. Tsarong, S.E. Tibet.

21674. **Primula Dickieana,** Watt, var. **chlorops,** W. W. Sm. et Forrest. Plant of 2–4 inches. Flowers deep purple-blue, eye green. On moist stony meadows on the Salwin-Kiu Chiang divide, W. of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 14,000 ft. June 1922. Tsarong, S.E. Tibet.

21675. **Primula Agleniana,** Balf. f. et Forrest. Plant of 10–16 ins. Flowers fleshy, fragrant, creamy-white. Open, moist, alpine meadows and by streams on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 35′ N. Long. 98° 18′ E. Alt. 14–14,500 ft June 1922. Tsarong, S.E. Tibet.

21676. **Rosa.** Spinous clambering shrub of 5–10 ft. Flowers fragrant, rose-pink. In thickets by streams on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 7,000 ft. June 1922. Tsarong, S.E. Tibet.

21677. **Holboellia latifolia,** Wall. ♂ Scandent shrub of 5–8 ft. Flowers fragrant, creamy-yellow. On scrub by streams in shady side valleys on the Londre La, Mekong-Salwin divide. Lat. 28° 14′ N. Long. 98° 43′ E. Alt. 10,000 ft. May 1922. Tsarong, S.E. Tibet.

21678. **Berneuxia thibetica,** Decne. Plant of 8–10 inches. Flowers creamy-white. Shady rocks and slopes in forests in side valleys on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 10–11,000 ft. June 1922. Tsarong, S.E. Tibet.

21722. **Magnolia tsarongensis,** W. W. Sm. et Forrest. Shrub of 7–12 ft. Flowers white or creamy-white, fragrant. In and on the margins of mixed thickets in side valleys on the Salwin-Kiu Chiang divide, north west of Si-chi-to. Lat. 28° 45′ N. Long. 98° 18′ E. Alt. 10–10,500 ft. June 1922. Tsarong, S.E. Tibet.

21788. **Primula calliantha,** Franch. Plant of 4–9 inches. Flowers fragrant, deep rose, eye yellow. Moist alpine meadows amongst rocks by streams on the Salwin-Kiu Chiang divide, W. of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 12–13,000 ft. June 1922. Tsarong, S.E. Tibet.

21789. **Carex.** Tufted plant of 6–10 inches. Moist alpine pasture by streams on the Salwin-Kiu Chiang divide, W. of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 13,000 ft. June 1922. Tsarong, S.E. Tibet.

21790. **Asteropyrum peltatum,** Drumm. et Hutch. Creeping plant of 2 inches. Flowers white. Moist open pasture on the margins of thickets and by streams on the Salwin-Kiu Chiang divide, W. of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 13,000 ft. June 1922. Tsarong, S.E. Tibet.

21791. **Primula flexilipes,** Balf. f. et Forrest. Plant of 6–16 inches. Flowers soft clear yellow, fragrant. Moist alpine meadows and in corries by streams and thickets on the Salwin-Kiu Chiang divide, W. of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 14–14,500 ft. June 1922. Tsarong, S.E. Tibet.

21792. **Primula Valentiniana,** Hand.-Mzt. Plant of 1½–3 inches. Flowers solitary occasionally in pairs, pendulous, fragrant, deep purplish-crimson. Moist alpine meadows and moorland on the Salwin-Kiu Chiang divide, W. of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 13–14,000 ft. June 1922. Tsarong, S.E. Tibet.

21793. **Omphalogramma elegans,** G. Forrest. Plant of 6–9 ins. Flowers rich, deep indigo-purple. Moist pasture on the margins of and amongst dwarf scrub on the Salwin-Kiu Chiang divide, W. of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 12,000 ft. June 1922. Tsarong, S.E. Tibet.

21794. **Primula apoclita,** Balf. f. et Forrest. Plant of 6–9 inches. Flowers pale purple, fragrant. Open grassy alpine slopes on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 13,000 ft. June 1922. Tsarong, S.E. Tibet.

21795. **Omphalogramma minus,** Hand.-Mzt. vel aff. Plant of 2–4 inches. Flowers rosy-purple. Open stony pasture amongst rocks by streams on the Salwin-Kiu Chiang divide, W. of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 11–12,000 ft. June 1922. Tsarong, S.E. Tibet.

21796. **Diplarche multiflora,** Hook. f. et Thoms. Tufted shrub of 6–9 inches. Flowers white. Open, stony, moist meadows and on moist outcropping rocks on the Salwin-Kiu Chiang divide, W. of Si-K'ai. Lat. 27° 46′ N. Long. 98° 33′ E. Alt. 12,000 ft. June 1922. Tsarong, S.E. Tibet.

21797. **Acer Campbellii,** Hook. f. et Thoms. var. **yunnanensis,** Rehd. Shrub of 25–30 ft. Flowers dark ruddy olive-green. In thickets by streams in side valleys on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 40′ N. Long. 98° 16′ E. Alt. 10–11,000 ft. June 1922. Tsarong, S.E. Tibet.

21798. **Symplocos** sp. aff. **crataegoides,** Ham. Spreading shrub of 10–20 feet. Flowers pale yellow, fragrant. In thickets by streams in side valleys on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 10,000 ft. June 1922. Tsarong, S.E. Tibet.

21799. **Pyrus.** Shrub of 8–10 ft. Flowers deep crimson, specially dark in bud. In open thickets in ravines and on ledges of cliffs on the Salwin-Kiu Chiang divide, W. of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 11,000 ft. June 1922. Tsarong, S.E. Tibet.

21800. **Pyrus.** Shrub of 12–15 ft. Flowers pink. In open thickets and mixed forests by streams on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 10–11,000 ft. June 1922. Tsarong, S.E. Tibet.

21801. **Pyrus.** Shrub of 20–30 ft. Flowers white. In thickets in side valleys by streams on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 12,000 ft. June 1922. Tsarong, S. E. Tibet.

21802. **Prunus undulata,** Ham. Shrub of 20–35 ft. Flowers white. In mixed thickets in side valleys on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 11,000 ft. June 1922. Tsarong, S.E. Tibet.

21803. **Styrax shweliensis,** W. W. Sm. Shrub of 15–20 ft. Flowers creamy-white, fragrant. In thickets on the margins of forests on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 9,000 ft. June 1922. Tsarong, S.E. Tibet.

21804. **Prunus mugus,** Hand.-Mzt. Dwarf semi-prostrate shrub of 3 ft. Flowers pale rose-pink. On boulders and rocky slopes in side valleys on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 13,000 ft. June 1922. Tsarong, S.E. Tibet.

21805. **Vaccinium Delavayi,** Franch. Shrub of 1 ft. Flowers dull rose, deepest at tip. On ledges of cliffs on boulders and trees in side valleys on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 11–12,000 ft. June 1922. Tsarong, S.E. Tibet.

21806. **Pyrus.** Shrub of 10–15 ft. Flowers creamy-white, small. In thickets on rocky slopes in side valleys on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 10–11,000 ft. June 1922. Tsarong, S.E. Tibet.

21807. **Idesia polycarpa,** Maxim. Tree of 25–50 ft. Flowers olive-yellow. In mixed forests and thickets on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 10–11,000 ft. June 1922. Tsarong, S.E. Tibet.

21808. **Ilex** sp. aff. **corallina,** Franch. Shrub of 7–12 feet. Flowers light olive-green, almost white. In thickets by streams on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 9–10,000 ft. June 1922. Tsarong, S.E. Tibet.

21920. **Viburnum cordifolium,** Wall. Shrub of 6–15 ft. In fruit, fruits black. Open conifer forests and amongst alpine scrub on the Sungkwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

21925. **Scopolia lurida,** Dunal. Plant of 2–3 ft. Flowers livid green. Amongst scrub in shady situations by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

21926. **Caragana crassicaulis,** Benth. Tufted, semi-prostrate, shrubby plant of 6–18 inches. In fruit. Open, dry, alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. July 1922. N.W. Yunnan.

21927. **Aster.** Plant of 18–24 inches. Ray florets deep purple, disc florets dark purplish-green. Margins of alpine thickets on the Sungkwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 12,000 ft. July 1922. N.W. Yunnan.

21928. **Stemona Wardii,** W. W. Sm. Semi-creeping plant of 6–18 inches. Flowers waxy-white, faintly flushed purple on exterior. Dry limestone slopes on the mountains east of Yungning. Lat. 27° 45′ N. Long. 101° E. Alt. 9–10,000 ft. July 1922. S.W. Szechuan.

21929. **Chlorophytum khasianum,** Hook. f. Plant of 16–30 inches. Flowers white, anthers yellow. Amongst scrub on dry limestone slopes on the hills east of Yungning. Lat. 27° 45′ N. Long. 101° E. Alt. 9–10,000 ft. July 1922. S.W. Szechuan.

21930. **Primula yunnanensis,** Franch. Plant of 1–2½ inches. Flowers pale lavender-rose, tube green. On dry limestone rocks on the hills east of Yungning. Lat. 27° 45′ N. Long. 101° E. Alt. 10–11,000 ft. July 1922. S.W. Szechuan.

21933. **Meconopsis Delavayi,** Franch. Plant of 8–16 inches. In fruit. Dry, limy meadows on the hills east of the Lichiang valley. Lat. 27° 20′ N. Long. 100° 13′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21935. **Aster yunnanensis,** Franch. Plant of 16–20 inches. Ray florets purple-blue, disc florets yellowish-green. Margins of thickets and forests on the mountains east of Yungning. Lat. 27° 45′ N. Long. 101° E. Alt. 12,000 ft. July 1922. S.W. Szechuan.

21942. **Helwingia himalaica,** Hook. f. et Thoms. Shrub of 4–6 ft. In fruit, fruits black. By streams in shady side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

21945. **Iris.** Plant of 16–20 inches. Flowers blue-purple, with grey markings on falls. Open, moist alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

21946. **Arisaema candidissima,** W. W. Sm. Plant of 12–18 inches. Spathe white. Open rocky slopes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. July 1922. N.W. Yunnan.

21951. **Cautleya lutea,** Royle. Plant of 18–24 inches. Flowers yellow, calyces purplish-red. In thickets by streams on the mountains east of Yungning. Lat. 27° 45′ N. Long. 101° E. Alt. 10,000 ft. July 1922. S.W. Szechuan.

21952. **Abies Faxoniana,** Rehd. et Wils. Tree of 30–60 ft. In mixed and conifer forests on the mountains east of Yungning. Lat. 27° 45′ N. Long. 101° E. Alt. 11–12,000 ft. July 1922. S.W. Szechuan.

21953. **Cephalotaxus sinensis,** Rehd. et Wils. Shrub or tree of 20–50 ft. In fruit. In mixed thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

21955. **Cotoneaster.** Shrub of 2–5 ft. In fruit, fruits red and white. Margins of thickets and by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11,000 ft. July 1922. N.W. Yunnan.

21956. **Chrysosplenium Griffithii,** Hook. f. et Thoms. Plant of 6–10 inches. Flowers greenish-yellow. On rocks and trees in shady, moist situations by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

21957. **Primula cernua,** Franch. Plant of 9–14 inches. Flowers fragrant, deep purplish-blue. Shady meadows on the margins of forests and thickets on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11,000 ft. July 1922. N.W. Yunnan.

21958. **Pedicularis axillaris,** Franch. Straggling plant of 2 or even more feet. Flowers rose, beak darkest. Shady damp situations in forests and thickets on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11,000 ft. July 1922. N.W. Yunnan.

21960. **Lagotis** sp. aff. **alutacea,** W. W. Sm. Plant of 16–20 inches. Flowers white. Shady situations on the margins of thickets and by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

21961. **Cotoneaster.** Shrub of 3–5 ft. In fruit, fruits deep crimson. Open rocky slopes amongst scrub in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11,000 ft. July 1922. N.W. Yunnan.

21962. **Meconopsis betonicifolia,** Franch. Duplicate in fruit of F. No. 21500. Same locality and situation. Aug. 1922. N.W. Yunnan.

21963. **Lonicera lanceolata,** Wall. Shrub of 4–6 ft. In fruit. In thickets and cane brakes in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

21964. **Apios.** Trailing plant of several feet. Flowers greenish-yellow. Amongst rock and heavy grass in side valleys by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

21966. **Celtis yunnanensis,** Schneid. Shrub of 10–30 ft. In fruit. In open thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

21968. **Berberis replicata,** W. W. Sm. Spinous shrub of 2–4 ft. In fruit, fruits black-purple. On bouldery, scrub-clad slopes in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12,000 ft. Aug. 1922. N.W. Yunnan.

21970. **Thea drupifera** (Lour.), Pierre. Shrub of 2–4 ft. In fruit. In scrub and open thickets on rocky slopes in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99°40′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

21971. **Cremanthodium Helianthus** (Franch.). Plant of 14–16 inches. Ray florets golden-yellow, disc florets olive-green, fragrant. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

21973. **Anaphalis pterocaulon,** Maxim. Plant of 10–15 inches. Flowers greenish-white. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 14,500 ft. Aug. 1922. N.W. Yunnan.

21976. **Rhamnus Sargentianus,** Schneid. vel aff. Shrub of 6–10 ft. In fruit. In open thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

21978. **Prunus.** Shrub of 15–25 ft. In fruit, fruits red. Open thickets and forests on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

21979. **Cotoneaster.** Shrub of 6–10 ft. In fruit, fruits bright coral-red. In open thickets and by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

21980. **Salix cheilophila,** Schneid. ♀ Shrub of 6–9 ft. In fruit. By streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11,000 ft Aug. 1922. N.W. Yunnan.

21982. **Lilium roseum,** Wall. Plant of 2–4 ft. Flowers deep soft purplish-rose. Open alpine meadows on the margins of scrub and thickets on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 12,000 ft. Aug. 1922. N.W. Yunnan.

21983. **Primula pinnatifida,** Franch. Plant of 8–14 inches. Flowers fragrant, blue-purple. Open alpine meadows and slopes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

21984. **Aster** sp. aff. **yunnanensis,** Franch. Plant of 6–12 inches. Ray florets blue-purple, disc florets dull green-orange. Open alpine meadows and slopes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

21985. **Aconitum** sp. aff. **venatorium,** Diels. Plant of 14–24 inches. Flowers immature, said to be ruddy-purple. Margins of thickets on alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

21986. **Meconopsis rudis,** Prain, vel aff. Spinous plant of 9–16 inches. Flowers deep wine-purple. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. Aug. 1922. N.W. Yunnan.

21989. **Geranium Pylzowianum,** Maxim. Plant of 2–5 inches. Flowers bright magenta-rose. Open alpine slopes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

21991. **Codonopsis tubulosa,** Kom. Trailing plant of 2–4 ft. Flowers greenish-yellow, lined purplish at base. On grassy slopes and amongst dwarf scrub on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. Aug. 1922. N.W. Yunnan.

21992. **Ligustrum.** Shrub of 3–6 ft. In fruit. In thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

21993. **Salix variegata,** Franch. vel aff. Shrub of 9–15 ft. In open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 11,000 ft. Aug. 1922. N.W. Yunnan.

21996. **Erysimum bracteatum,** W. W. Sm. Plant of 18–20 inches. Flowers deep orange-yellow. On boulders ledges of cliffs and rocky slopes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E.

21997. **Rubus.** Spinous shrub of 2 3½ ft. In fruit, fruits orange-crimson, edible. Open rocky slopes and alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

21998. **Juncus concinnus,** D. Don. Plant of 12-20 inches. Flowers creamy-white. Open, moist meadows and by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–12,000 ft. Aug. 1922. N.W. Yunnan.

21999. **Rosa.** Spinous shrub of 4 9 ft. Branches slightly arched. In fruit. Open thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

22000. **Primula muscarioides,** Hemsl. var. Plant of 16–20 inches. Flowers fragrant, pale purplish-blue. Open alpine meadows and by streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 11,000 ft. Aug. 1922. N.W. Yunnan.

22001. **Allium yunnanensis,** Diels. Plant of 6–10 inches. Flowers magenta-crimson. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. Aug. 1922. N.W. Yunnan.

22003. **Saxifraga diversifolia,** Wall. var. Plant of 6–10 inches. Immature. Alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

22004. **Tilia chinensis,** Maxim. var. Shrub or tree of 25–50 ft. In mixed forests and by streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. Aug. 1922. N.W. Yunnan.

22005. **Rubus lasiocarpus,** Sm. Spinous shrub of 10–20 ft. Branches arched. Flowers magenta-rose, fruits black when ripe (!), edible. Open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9–11,000 ft. Aug. 1922. N.W. Yunnan.

22006. **Pyrus.** Shrub of 9–20 ft. In fruit, fruits red (?). Open thickets by streams and on rocky slopes in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11,000 ft. Aug. 1922. N.W. Yunnan.

22007. **Primula sinoplantaginea,** Balf. f. Plant of 16–18 ins. In fruit. Alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

22008. **Juniperus** sp. Shrub of 2–4 ft. Branches arched. Open rocky slopes and on alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12,000 ft. Aug. 1922. N.W. Yunnan.

22009. **Habenaria Delavayi,** Finet. Plant of 6–10 inches. Flowers green and white, fragrant. Open stony pasture on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22010. **Chlorophytum chinense,** Bur. et Franch. v. aff. Plant of 6–15 inches. Flowers white, anthers orange. Open, stony pasture on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22012. **Senecio lapathifolius,** Franch. Plant of 3–5 ft. Flowers orange-yellow. Open situations amongst scrub by streams on the eastern flank of the Lichiang range. Lat. 27° 15′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

22015. **Quercus semecarpifolia,** Sm. vel aff. Shrub or tree of 20–50 ft. Forming groves on the eastern flank of the Lichiang range. Lat. 27° 12′ N. Long. 100° 12′ E. Alt. 9–11,000 ft. Aug. 1922. N.W. Yunnan.

22016. **Habenaria Beesiana,** W. W. Sm. Plant of 6–10 inches. Flowers green. Dry pasture in open pine forest on the eastern flank of the Lichiang range. Lat. 27° 12′ N. Long. 100° 12′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22017. **Castanopsis** sp.? Shrub of 20–40 ft. In conifer and mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

22022. **Pueraria edulis,** Pampan. vel aff. Scandent shrubby plant of 10–20 ft. Flowers rose-purple. In thickets on shrubs by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

22023. **Primula yunnanensis,** Franch. Plant of 1–2½ inches. Flowers rose, tube green. On humus-covered boulders and limy pasture on the mountains north of Yungpeh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

22024. **Lilium ochraceum,** Franch. Plant of 3–6 ft. Flowers fragrant, greenish-yellow, marked and flushed purple. In open scrub and mixed forests on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 9–11,000 ft. Aug. 1922. N.W. Yunnan.

22025. **Euonymus amygdalifolius,** Franch. Shrub of 20–30 ft. In fruit. In open thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

22026. **Prunus nepaulensis,** Steud. vel aff. Shrub of 20–25 ft. In fruit. In thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

22027. **Ilex.** Spinous-leaved shrub of 10–15 ft. Foliage only. In dense thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

22028. **Zizyphus yunnanensis,** Schneid. Shrub of 12–18 ft. In fruit. Thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. Aug. 1922. N.W. Yunnan.

22029. **Caryopteris divaricata,** Maxim. Plant of 2–2½ ft. Flowers purple, tube yellow. Margins of shady thickets and mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22030. **Carpinus.** Shrub of 20–25 ft. In fruit. In thickets on slopes in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22031. **Olea** sp. vel **Ligustrum** sp. Leathery-leaved shrub of 6–12 ft. In fruit. In open thickets on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22032. **Primula** sp. aff. **denticulata,** Sm. Plant of 16–20 inches. In old fruit. Open marshy meadows on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

22033. **Chirita pumila,** D. Don. Plant of 1–3 inches. Flowers pale lilac purple shaded to pale yellow at base. On moist humus-covered boulders and rocks by streams on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22034. **Rheum officinale,** Baill. Plant of 5–8 ft. Flowers creamy-yellow. On the margins of forests by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

22035. **Allium polyastrum,** Diels. Plant of 2–2½ ft. Flowers deep rich magenta. On ledges of cliffs and rocky slopes in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22036. **Betula Delavayi,** Franch. var. Shrub of 6–12 feet. Amongst scrub and in thickets on rocky slopes on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22037. **Primula yunnanensis,** Franch. Plant of 1½–3 inches. In immature fruit. On limestone cliffs and boulders on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 12′ E. Alt. 11,000 ft. Aug. 1922. N.W. Yunnan.

22038. **Pyrus.** Shrub or tree of 20–40 ft. In fruit, immature. On rocky slopes in mixed thickets and forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11,000 ft. Aug. 1922. N.W. Yunnan.

22039. **Primula pulchella,** Franch. Plant of 8–12 inches. In fruit. Open limy meadows on the western flank of the Lichiang range. Lat. 27° 25′ N. Long. 100° 12′ E. Alt. 11–12,000 ft. Aug. 1922. N.W. Yunnan.

22040. **Primula Forrestii,** Balf. f. Matted plant of 3–5 inches. In fruit. Dry limestone rocks and slopes on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

22041. **Pyrus.** Shrub of 18–25 ft. In immature fruit. In thickets on rocky slopes on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11,000 ft. Aug. 1922. N.W. Yunnan.

22043. **Hemsleya chinensis,** Cogn. vel aff. Scandent plant of many feet. Flowers greenish-orange. On scrub in thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22045. **Berchemia floribunda,** Brongn. Semi-scandent (?) shrub of 10–12 ft. Flowers immature. Amongst scrub by streams in open situations on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

22046. **Peltigera.** On trunks of evergreen oak trees in mixed forests on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22047. **Primula blattariformis,** Franch. var. Plant of 8–12 inches. In immature fruit. On open limy meadows and ledges of cliffs on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. July 1922. S.W. Szechuan.

22048. **Corylus chinensis,** Franch. vel aff. Shrub of 20 ft. Foliage only. In mixed forests on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. July 1922. S.W. Szechuan.

22050. **Viburnum erubescens,** Wall. var. Shrub of 4–9 ft. In fruit. Amongst scrub and in thickets on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 10–11,000 ft. July 1922. S.W. Szechuan.

22051. **Berberis** sp. aff. **Poireti,** Schneid. Shrub of 4–5 ft. Sparingly spinous. Open rocky hillsides amongst scrub on the mountains between Yung-peh and Yungning. Lat. 27° 20′ N. Long. 100° 48′ E. Alt. 10,000 ft. July-Aug. 1922. S.W. Szechuan.

22053. **Primula cernua,** Franch. Plant of 10–14 inches. Flowers fragrant, light purple-blue. Open hillsides amongst scrub and moist situations by streams on the mountains between Yung-peh and Yungning. Lat. 27° 20′ N. Long. 100° 48′ E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22054. **Trigonotis microcarpa,** Benth. vel aff. Plant of 10–14 inches. Flowers pale blue. Open rocky pasture and amongst scrub on the mountains between Yung-peh and Yungning. Lat. 27° 20′ N. Long. 100° 48′ E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22055. **Strobilanthus Dielsianus,** W. W. Sm. Plant of 6–18 inches. Flowers pale lavender-blue. Open dry hillsides on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 10 11,000 ft. Aug. 1922. N.W. Yunnan.

22056. **Rhabdothamnopsis sinensis,** Hemsl. var. **ochroleuca,** W. W. Sm. Plant of 9–12 inches. Flowers pale-yellow. Open dry hillsides on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

22057. **Amphicome arguta,** Royle. Plant of 6–12 inches. Flowers pure white. Open dry hillsides amongst rocks and on the margins of thickets on the mountains between Yung-peh and Yungning. Lat. 27° 20′ N. Long. 100° 48′ E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22058. **Ligustrum lucidum,** Ait. Shrub of 8–12 ft. Flowers creamy-white, fragrant. In thickets in side valleys by streams on the mountains between Yung-peh and Yungning. Lat. 27° 20′ N. Long. 100° 48′ E. Alt. 10,000 ft. Aug. 1922. S.W. Szechuan.

22059. **Liparis Parishii,** Hook. f. Plant of 6–12 inches. Flowers ruddy-brown. In cane brakes and dry shady thickets on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22060. **Viburnum brachybotryum,** Hemsl. var. **tengyuehense,** W.W. Sm. Shrub of 8–10 ft. In fruit. Fruits very dark crimson. In thickets by streams on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

22061. **Lilium Delavayi,** Franch. Dry hillsides on the margins of thickets on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22062. **Habenaria Finetiana,** Schltr. Plant of 3–7 inches. Flowers pure white, fragrant. Open, dry meadows on the mountains between Yung-peh and Yungning. Lat. 27° 20′ N. Long. 100° 40′ E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22063. **Rubus mesogaeus,** Focke, vel aff. Spinous shrub of 6–9 ft. Branches arched. In fruit, fruits black. Open thickets and on the margins of forests on the mountains between Yung-peh and Yungning. Lat. 27° 20′ N. Long. 100° 48′ E. Alt. 12,000 ft. Aug. 1922. S.W. Szechuan.

22064. **Aster.** Plant of 18–20 inches. Ray florets deep lavender, disc florets orange-yellow. Dry stony meadows and on the margins of thickets on the mountains between Yung-peh and Yungning. Lat. 27° 20′ N. Long. 100° 48′ E. Alt. 11–12,000 ft. Aug. 1922. S.W. Szechuan.

22065. **Chirita orbicularis,** W. W. Sm. Plant of 4–8 inches. Flowers purple-blue, shaded to greenish-yellow at base. On damp rocks by streams on the mountains between Yung-peh and Yungning. Lat. 27° 20′ N. Long. 100° 48′ E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22067. **Clematis nutans,** Royle, var. Scandent shrub of 4–6 ft. Flowers dull creamy-yellow. On rocks and scrub in side valleys on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22068. **Linaria yunnanensis,** W. W. Sm. Plant of 12–18 inches. Flowers pale greenish-yellow. Open, dry hillsides amongst rocks on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22069. **Saxifraga pratensis,** Engl. et Irmsch. vel aff. Plant of 6–10 inches. Flowers (?) immature. Open stony slopes by streams amongst scrub on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22070. **Campanula calcicola,** W. W. Sm. Plant of 2–4 inches. Flowers (?) immature. On ledges of dry limestone cliffs and humus-covered boulders in side valleys on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 11–12,000 ft. Aug. 1922. S.W. Szechuan.

22071. **Lysimachia vulgaris,** Linn. var. Plant of 2–2½ ft. Flowers yellow. Open situations in thickets and scrub by streams and on rocky hillsides on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22072. **Adenophora leptosepala,** Diels. Plant of 2–2½ ft. Flowers pale blue. Dry hillsides and meadows amongst scrub on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22073. **Primula Pauliana,** W. W. Sm. et Forrest. Plant of 9–16 inches. Flowers pale yellow eye and tube orange. Margins of thickets and forests and on open meadows on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 11–12,000 ft. Aug. 1922. S.W. Szechuan.

22074. **Didissandra lineata,** Craib. Plant of 3–5 inches. Flowers yellowish-white. Open, dry limestone cliffs and slopes on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22075. **Codonopsis tubulosa,** Kom. Trailing plant of several feet. Flowers dull green. Amongst rocks and on lush pasture on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22076. **Platanthera Susanae,** Lindl. Plant of 10–16 inches. Flowers waxy white. Open, moist meadows on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 10,000 ft. Aug. 1922. S.W. Szechuan.

22077. **Adenophora leptosepala,** Diels. Plant of 2 ft. Flowers white. Open, dry hillsides on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22078. **Symplocos paniculata,** Wall. vel aff. Shrub of 6–12 ft. In fruit. In open thickets on dry hillsides on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22079. **Machilus** sp. aff. **ichangensis,** Rehd. et Wils. Shrub of 10 ft. Foliage only. In thickets and on the margins of forests on the mountains between Yung-peh and Yungning. Lat. 27° 20′ N. Long. 100° 48′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

22080. **Rosa.** Clambering spinous shrub of 10 ft. In fruit. In open thickets on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22081. **Gmelina montana,** W. W. Sm. Shrub of 4–6 ft. Flowers ruddy-purple, yellowish at base. Margins of thickets and by streams on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22082. **Premna acutata,** W. W. Sm. Shrub of 5–6 ft. Flowers rose. Open thickets and margins of forests on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22083. **Olea** sp. vel **Ligustrum,** sp. Shrub of 3–6 ft. In fruit. In thickets on dry bouldery hillsides on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

22084. **Viburnum foetidum,** Wall. forma. Shrub of 3 ft. Flowers creamy-yellow. Dry open bouldery hillsides in thickets on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

22085. **Zehneria umbellata,** Thw. Scandent plant of many feet. Flowers creamy-yellow. On scrub in thickets in side valleys north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

22086. **Codonopsis tubulosa,** Kom. Trailing plant of several feet. Flowers greenish-yellow. Open alpine meadows on the mountains between Yung-peh and Yung-ning. Lat. 27° 20′ N. Long. 100° 48′ E. Alt. 11,000 ft. Aug. 1922. N.W. Yunnan.

22087. **Lilium Bakerianum,** Hemsl. Plant of 12–16 inches. Flowers white, dull exterior. Dry hillsides amongst boulders and scrub on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 8–9,000 ft. July 1922. N.W. Yunnan.

22088. **Didissandra flabellata,** Craib, var. Plant of 4–6 inches. Flowers white. Open, dry meadows on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

22089. **Camptandra fougyuensis,** Gagnep. Plant of 12–18 inches. Flowers pale yellow. Moist, shady thickets by streams in side valleys on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

22090. **Aristolochia moupinensis,** Franch. Scandent clambering plant of several feet. Flowers dull livid purplish-yellow. Amongst rock and scrub on dry shady slopes in side valleys on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

22091. **Tremacron Forrestii,** Craib. Plant of 6–12 inches. Flowers yellowish-green. On dry rocks and cliffs on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 48′ E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22093. **Apios.** Scandent plant of several feet. Flowers very pale yellow. On scrub in thickets in side valleys on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

22094. **Campanula xylopoda,** J. F. Jeff. vel aff. Tufted plant of 6–10 inches. Flowers deep blue. Open limy meadows on the mountains west of Mu-li. Lat. 28° 18′ N. Long. 100° 42′ E. Alt. 10–11,000 ft. July 1922. S.W. Szechuan.

22095. **Ternstroemia japonica,** Thunb. var. **Wightii,** Dyer. Shrub of 6–12 ft. In fruit. In open thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

22096. **Sedum.** Plant of 4–7 inches. Flowers creamy-white. Moist ledges of cliffs and humus-covered boulders in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

22097. **Saxifraga macrostigma,** Franch. var. **hypericoides,** Engl. et Irmsch. Matted plant of 2–2½ inches. Flowers deep orange. Stony alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12–13,000 ft. Aug. 1922. S.W. Szechuan.

22098. **Leontopodium calocephalum** (Franch.), Beauv. Plant of 6–12 inches. Flowers greyish. On open alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 13–14,000 ft. Aug. 1922. S.W. Szechuan.

22099. **Arenaria Delavayi,** Franch. Plant of 6–10 inches. Flowers white. Open stony pasture on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 13,000 ft. Aug. 1922. S.W. Szechuan.

22100. **Anaphalis.** Cushion plant of 6 inches in height, 1–2 ft. diameter. Flowers greyish-brown. Open, stony alpine meadows and on cliffs and boulders on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14,000 ft. Aug. 1922. S.W. Szechuan.

22101. **Potentilla eriocarpa,** Wall. var. **tsarongensis,** W. E. Evans. Tufted plant of 6–12 inches. Flowers orange-yellow. On ledges of cliffs and humus-covered boulders on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12–13,000 ft. Aug. 1922. S.W. Szechuan.

22102. **Anaphalis rhododactyla,** W. W. Sm. Cushion plant of 3–6 inches. Flowers grey, phyllaries bright rose. Open alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14,000 ft. Aug. 1922. S.W. Szechuan.

22103. **Saxifraga macrostigma,** Franch. var. **hypericoides,** Engl. et Irmsch. fa. **latifolia,** Engl. et Irmsch. Matted plant of 3–4 inches. Flowers deep orange. On moist, peaty, alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14,500 ft. Aug. 1922. S.W. Szechuan.

22104. **Primula anisodora,** Balf. f. et Forrest. Plant of 2 ft. Flowers deep purple, eye green, tube very deep ruddy purple. Foliage non-aromatic, at least in the dried state. Marshes and streams in thickets on the mountains west of Mu-li. Lat. 28° 18′ N. Long. 100° 42′ E. Alt. 10–11,000 ft. July 1922. S.W. Szechuan.

22105. **Boehmeria.** Plant of 2–3 ft. Flowers ruddy brown. Margins of thickets on the mountains west of Mu-li. Lat. 28° 18′ N. Long. 100° 42′ E. Alt. 10,000 ft. July 1922. S.W. Szechuan.

22106. **Erigeron multiradiatus,** Benth. var. Plant of 1½–2 ft. Flowers, ray florets white, disc florets dull orange. Open alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14,000 ft. Aug. 1922. S.W. Szechuan.

22107. **Saxifraga macrostigma,** Franch. var. **hypericoides, Engl.** et Irmsch. Matted plant of 2–3 inches. Flowers orange. Open, stony, moist, alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12–13,000 ft. Aug. 1922. S.W. Szechuan.

22109. **Koelreuteria paniculata,** Laxm. Dioecious tree of 30–40 ft. In immature fruit. Open situations on the margins of streams in the Litang valley, Mu-li district. Lat. 28° 20′ N. Long. 100° 48′ E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

[For male see F. No. 21330.]

22111. **Saxifraga hispidula,** D. Don var. **Doniana,** Engl. Matted plant of 3–6 inches. Flowers orange. On stony alpine meadows and boulders on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12–13,000 ft. Aug. 1922. S.W. Szechuan.

22112. **Campanula cana,** Wall. Matted shrubby plant of 1–2 ft. Flowers blue (?). Forming festoons on the ledges of cliffs and on boulders on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22113. **Campanula colorata,** Wall. Plant of 9–12 inches. Flowers deep blue. Open, dry, stony meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12–13,000 ft. Aug. 1922. S.W. Szechuan.

22114. **Orchis tetraloba** (Finet), Schltr. Plant of 3–5 inches. Flowers crimson-rose. Open marshy meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9–10,000 ft. Aug. 1922. S.W. Szechuan.

22115. **Silene** sp. aff. **chungtienensis,** W. W. Sm. Plant of 2 ft. Flowers deep dull crimson-maroon. Open situations amongst rocks and on the margins of thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22116. **Primula sinoplantaginea,** Balf. f. Plant of 10–13 ins. In fruit. Open alpine meadows and on the margins of alpine thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 13–14,000 ft. Aug. 1922. S.W. Szechuan.

22117. **Arenaria longistyla,** Franch. var. Plant of 1–2 inches. Flowers watery white. Stony alpine pasture on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14–15,000 ft. Aug. 1922. S.W. Szechuan.

22118. **Saussurea spatulifolia,** Franch. vel aff. Plant of 1 inch. Flowers crimson and purple. Open alpine moorland on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14–15,000 ft. Aug. 1922. S.W. Szechuan.

22119. **Paederia tomentosa,** Blume. Scandent shrubby plant of several feet. Flowers lavender-rose, malodorous. On scrub in thickets o nthe mountains west of Mu-li. Lat. 28° 18′ N. Long. 100° 42′ E. Alt. 9,000 ft. July 1922. S.W. Szechuan.

22120. **Saxifraga macrostigma,** Franch. var. **hypericoides,** Engl. et Irmsch. Tufted plant of 3–6 ins. Flowers orange. Open, moist alpine meadows on the mountains west of Mu-li. Lat. 28° 18′ N. Long. 100° 42′ E. Alt. 12–13,000 ft July 1922. S.W. Szechuan.

22121. **Pedicularis rhodotricha,** Maxim. Plant of 6–9 inches. Flowers rose, beak darkest. On stony alpine meadows and screes on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12–13,000 ft. Aug. 1922. S.W. Szechuan.

22122. **Cremanthodium suave,** W. W. Sm. Plant of 10–15 inches. Flowers fragrant. Ray florets dull orange-yellow, disc florets greenish-orange. Open alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12–13,000 ft. Aug. 1922. S.W. Szechuan.

22123. **Saussurea spatulifolia,** Franch. Matted plant of 1–1½ inches. Flowers purple and crimson. Open alpine meadows and on boulders on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14,000 ft. Aug. 1922. S.W. Szechuan.

22124. **Dipoma iberideum,** Franch. Straggling plant of 2–4 inches. Flowers white. Open, stony meadows and on screes on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12–13,000 ft. Aug. 1922. S.W. Szechuan.

22125. **Saxifraga Hirculus,** Linn. var. **typica,** Hook. fa. **major,** Engl. et Irmsch. Plant of 10-14 inches. Flowers orange-yellow. Moist alpine meadows on the margins of thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12,000 ft. Aug. 1922. S.W. Szechuan.

22126. **Bupleurum longicaule,** Wall. var. Plant of 4-8 inches. Flowers yellow-brown. Open alpine pasture on the margins of thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 13,000 ft. Aug. 1922. S.W. Szechuan.

22127. **Campanula crenulata,** Franch. Plant of 8-12 inches. Flowers deep indigo-blue, drying white. On limestone cliffs and limy meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12-13,000 ft. Aug. 1922. S.W. Szechuan.

22128. **Saxifraga chionophylla,** Franch. Cushion plant of 2-5 inches diameter. Flowers (?) red (!). On limestone cliffs and boulders on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14,000 ft. Aug. 1922. S.W. Szechuan.

22129. **Campanula Delavayi,** Franch. Plant of 12-15 inches. Flowers blue. Dry situations in shady scrub on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12,000 ft. Aug. 1922. S.W. Szechuan.

22130. **Erigeron patentisquama,** J. F. Jeff. Plant of 12-20 inches. Ray florets, magenta-rose, drying blue, disc florets yellow-green. On open alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 13-14,000 ft. Aug. 1922. S.W. Szechuan.

22131. **Artemisia** sp.? Shrubby aromatic plant of 1½-2 ft. Flowers orange. On ledges of cliffs and stony meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12-13,000 ft. Aug. 1922. S.W. Szechuan.

22132. **Meconopsis Prattii,** Prain. Spinous plant of 16 inches. Flowers deep wine-purple. Open stony alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 13,000 ft. Aug. 1922. S.W. Szechuan.

22133. **Campanula calcicola,** W. W. Sm. Plant of 3–5 inches. Flowers deep rich blue. Ledges and crevices of limestone cliffs on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12,000 ft. Aug. 1922. S.W. Szechuan.

[May be same as F. No. 22070.]

22134. **Pedicularis ingens,** Maxim. Plant of 16–20 inches. Flowers rose, beak darkest. Open, stony meadows on the margins of forests on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12,000 ft. Aug. 1922. S.W. Szechuan.

22135. **Saxifraga** sp. aff. **diversifolia,** Wall. Plant of 9–12 inches. Flowers orange. Moist shady situations on the margins of mixed forests and thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11–12,000 ft. Aug. 1922. S.W. Szechuan.

22136. **Saxifraga** sp. aff. **cardiophylla,** Franch. Tufted plant of 3–7 inches. Flowers orange. On humus-covered boulders and damp peaty meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12,000 ft. Aug. 1922. S.W. Szechuan.

22137. **Saxifraga diversifolia,** Wall. var. Plant of 6–9 inches. Immature. Flowers (?). Moist situations by streams on alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12,000 ft. Aug. 1922. S.W. Szechuan.

22138. **Campanula cana,** Wall. Trailing matted plant of 10–16 inches. Flowers white. On ledges and in crevices of limestone cliffs on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22139. **Primula blattariformis,** Franch. var. **barybotrys** (Hand-Mzt.). Plant of 12–20 inches. Flowers fragrant, lavender-rose, eye and tube yellow. Shady ledges of limestone cliffs on the mountains west of Mu-li. Lat. 28° 18′ N. Long. 100° 42′ E. Alt. 9–10,000 ft. July 1922. S.W. Szechuan.

22140. **Primula cernua,** Franch. Plant of 12–15 inches. Flowers dark purplish-blue, fragrant. Open stony meadows by streams and in shady thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11–12,000 ft. Aug. 1922. S.W. Szechuan.

22141. **Abutilon** sp. aff. **indicum,** G. Don. Shrub of 6–9 ft. Flowers dull maize-orange (!). Open situations by streams in the Litang valley, Mu-li district. Lat. 28° 20′ N. Long. 100° 48′ E. Alt. 9–10,000 ft. July 1922. S.W. Szechuan.

22142. **Petrocosmea flaccida,** Craib. Plant of 1–2 inches. Flowers purple. Leaves very fleshy. Shady crevices and ledges of dry limestone cliffs on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9–10,000 ft. Aug. 1922. S.W. Szechuan.

22143. **Pedicularis cymbalaria,** Bonati. Semi-prostrate plant of 1–2 inches. Flowers pale yellow, almost white. Moist, stony pasture on the mountains S.W. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11–12,000 ft. Aug. 1922. S.W. Szechuan.

22144. **Valeriana stenoptera,** Diels. Plant of 3–12 inches. Flowers rose. On moist, stony pasture on the margins of thickets on the mountains west of Mu-li. Lat. 28° 18′ N. Long. 100° 42′ E. Alt. 10–11,000 ft. July 1922. S.W. Szechuan.

22145. **Gentiana cyananthiflora,** Franch. Plant of 2–4 inches. Flowers pale purplish-blue. Open, moist alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12–13,000 ft. Aug. 1922. S.W. Szechuan.

22146. **Schizopepon** sp. aff. **dioicus,** Cogn. Scandent plant of many feet. Flowers orange-yellow. On scrub on the margins of thickets by streams on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9–10,000 ft. Aug. 1922. S.W. Szechuan.

22147. **Rubia.** Plant of 1 ft. Flowers very dark crimson. Open, dry, stony meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11–12,000 ft. Aug. 1922. S.W. Szechuan.

22148. **Pedicularis dolichocymba,** Hand.-Mzt. Plant of 16–22 inches. Flowers deep rose, beak darkest. Open limy alpine meadows and rocky slopes on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12,000 ft. Aug. 1922. S.W. Szechuan.

22149. **Porana triserialis,** Schneid. Scandent plant of many feet. Flowers purplish-blue. On grass and scrub on the margins of thickets on the divide between the Yangtze and Yung-ning valleys. Lat. 27° 42′ N. Long. 100° 30′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

22150. **Acalypha** sp. aff. **szechuanensis,** Hutch. Shrub of 4–5 ft. Flowers (?). In open thickets on the slopes of the Litang valley, west of Mu-li. Lat. 28° 18′ N. Long. 100° 42′ E. Alt. 9–10,000 ft. July 1922. S.W. Szechuan.

22151. **Apios.** Scandent plant of 6–8 ft. Flowers greenish-yellow. On scrub and grass on open hillsides west of Mu-li. Lat. 28° 18′ N. Long. 100° 42′ E. Alt. 10,000 ft. July 1922. S.W. Szechuan.

22152. **Saxifraga turfosa,** Engler et Irmsch. Plant of 8–14 inches. Flowers orange. Moist alpine meadows on the mountains west of Mu-li. Lat. 28° 18′ N. Long. 100° 42′ E. Alt. 11,000 ft. July 1922. S.W. Szechuan.

22153. **Lonicera adenophora,** Franch. Shrub of 6–20 ft. In fruit. Open thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22154. **Saxifraga Giraldiana,** Engler, var. Tufted plant of 4–6 inches. Flowers ruddy orange. On moist stony alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 13,000 ft. Aug. 1922. S.W. Szechuan.

22155. **Indigofera Delavayi,** Franch. Shrub or tree of 20–60 ft. Flowers white, fragrant. In thickets by streams on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9,000 ft. Aug. 1922. S.W. Szechuan.

22156. **Anaphalis.** Tufted plant of 4–7 inches. Flowers greenish-white. Open, stony alpine meadows and on ledges of limestone cliffs on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14,000 ft. Aug. 1922. S.W. Szechuan.

22157. **Saxifraga drabiformis,** Franch. Matted plant of 1½–2 inches. Flowers deep rich yellow. On screes and stony meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 13–14,000 ft. Aug. 1922. S.W. Szechuan.

22158. **Leptocodon gracilis,** Linn. Scandent plant of 4–6 ft. Flowers blue. On grass and scrub on the margins of thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22159. **Rhamnus.** Shrub of 2–4 ft. In fruit, fruits black. On ledges of cliffs and rocky slopes on the mountains west of Mu-li. Lat. 28° 18′ N. Long. 100° 42′ E. Alt. 10,000 ft. July 1922. S.W. Szechuan.

22160. **Primula nutans,** Franch. Plant of 9–12 inches. Flowers (?) blue. Margins of open pine and mixed forests on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22161. **Wikstrœmia dolichantha,** Diels. Shrub of 2–4 feet. Flowers orange-olive. Dry, stony slopes amongst scrub and rock on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9,000 ft. Aug. 1922. S.W. Szechuan.

22162. **Parnassia mysorensis,** Heyne, var. Plant of 2–5 inches. Flowers white, lined green at base. Open, moist, stony meadows and by streams on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. Aug. 1922. S.W. Szechuan.

22163. **Pentapanax Leschenaultii,** Seem. Shrub of 10–18 ft. In fruit. In thickets by streams on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. Aug. 1922. S.W. Szechuan.

22164. **Viburnum erubescens,** Wall. var. Shrub of 3–5 ft. In fruit. On rocky slopes in side valleys amongst scrub on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22165. **Pyrus.** Shrub of 20 ft. In fruit, immature. In thickets on rocky slopes in side valleys on the mountains S.E. o fMu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22166. **Hemipilia flabellata,** Bur. et Franch. Plant of 10–14 inches. Flowers green. Open alpine stony meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22167. **Saussurea villosa,** Franch. vel aff. Plant of 14–20 inches. Flowers deep ruddy purple. Open alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12,000 ft. Aug. 1922. S.W. Szechuan.

22168. **Primula bathangensis,** Petitm. Plant of 12–18 inches. Flowers golden-orange. Open, dry, rocky slopes in side valleys on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9–10,000 ft. Aug. 1922. S.W. Szechuan.

22169. **Senecio** sp. aff. **caloxanthus,** Diels. Plant of 2–3 ft. Flowers orange-yellow. By streams and on boggy meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. Aug. 1922. S.W. Szechuan.

22170. **Saussurea.** Plant of 16–24 inches. Flowers deep bluish-purple. Open dry situations on meadows on the margins of scrub and thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11–12,000 ft. Aug. 1922. S.W. Szechuan.

22171. **Potentilla fruticosa,** Linn. forma. Shrub of 1–2 feet. Flowers orange. Open, stony meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12,000 ft. Aug. 1922. S.W. Szechuan.

22172. **Parasyringa sempervirens,** W. W. Sm. Shrub of 3–6 ft. Foliage coriaceous. Flowers creamy-white. Open thickets S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. Aug. 1922. S.W. Szechuan.

22173. **Tsuga Forrestii,** Downie. Shrub or tree of 30–60 ft. In mixed and conifer forests in side valleys on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22174. **Leucosceptrum canum,** Sm. Shrub of 10–25 feet. Flowers dull soft lavender-rose. Open thickets by streams in side valleys on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9–10,000 ft. Aug. 1922. S.W. Szechuan.

22175. **Hymenodictyon flaccidum,** Wall. Shrub of 10–15 ft. In immature fruit. In open thickets by streams on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

22176. **Ipomoea cairica,** Sweet. Scandent plant of several feet. Flowers magenta-rose, shaded to yellow at base. On scrub in thickets on dry, rocky slopes on the mountains north of Yung-peh. Lat. 26° 50′ N. Long. 100° 45′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

22177. **Pyrus.** Shrub of 20–35 ft. In immature fruit. Open thickets and on the margins of open forests on the mountains S.E. of Mu-li. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22178. **Saussurea villosa,** Franch. Plant of 10–16 inches. Flowers deep bluish-purple. Open stony alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12–13,000 ft. Aug. 1922. S.W. Szechuan.

22179. **Primula Littoniana,** Forrest, forma. Plant of 2–2½ ft. Flowers pale purplish-blue. Open moist meadows on the margins of conifer forests on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22180. **Keteleeria Davidiana,** Beiss. Shrub or tree of 30–60 ft. In fruit. In mixed forests in side valleys on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22181. **Tanacetum Delavayi,** Franch. var. Plant of 5–9 inches. Flowers orange. Open clayey meadows on the mountains S.E. of Mu-li. Non-aromatic. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22182. **Parasenecio Forrestii,** W. W. Sm. et J. Small. Plant of 12–16 inches. Flowers immature. Open clayey meadows on the margins of thickets on the mountains W. of Mu-li. Lat. 28° 18′ N. Long. 100° 42′ E. Alt. 11,000 ft. July 1922. S.W. Szechuan.

22183. **Silene tenuis,** Willd. var. **rubescens,** Franch. Plant of 6–10 inches. Flowers deep soft rose. Open stony meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12,000 ft. Aug. 1922. S.W. Szechuan.

22184. **Delphinium** sp. aff. **Bulleyanum,** Forrest ex Diels. Plant of 2–3 ft. Flowers deep purplish-blue. Margins of thickets by streams on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22185. **Taxus cuspidata,** Sieb. et Zucc. var. **chinensis,** Rehd. et Wils. Shrub of 10–25 ft. In immature fruit. Open mixed forests in side valleys on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22186. **Veratrum stenophyllum,** Diels. Plant of 3–4 feet. Flowers green. Margins of thickets and forests on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Aug. 1922. S.W. Szechuan.

22188. **Pyrus.** Shrub of 20 ft. In fruit. In mixed thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12,000 ft. Aug. 1922. N.W. Yunnan.

22189. **Perantha Forrestii,** Craib. Plant of 2–5 inches. Flowers deep orange. Crevices and ledges of dry limestone rocks and cliffs in shady side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

22190. **Skimmia melanocarpa,** Rehd. et Wils. Shrub of 10–20 ft. In fruit. Open thickets by streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22191. **Silene** sp. aff. **oblanceolata**, W. W. Sm. Plant of 1 inch. Flowers immature. Open, stony, clayey pasture on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 13,000 ft. Aug. 1922. S.W. Szechuan.

22192. **Rhamnus Hemsleyanus,** Schneid. Shrub of 6–10 ft. In fruit. Open thickets by streams on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22193. **Senecio caloxanthus,** Diels. Plant of 1½–2 ft. Flowers golden-yellow. By streams and on boggy meadows on the N.W. flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 12′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

22194. **Anemone glaucifolia,** Franch. Plant of 2½ ft. Flowers pure white. Open, stony meadows on the N.W. flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 12′ E. Alt. 11–12,000 ft. Aug. 1922. N.W. Yunnan.

22195. **Trachydium simplicifolium,** W. W. Sm. Plant of 3–5 inches. Flowers immature. Open alpine meadows on the N.W. flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 12′ E. Alt. 11–12,000 ft. Aug. 1922. N.W. Yunnan.

22196. **Senecio.** Plant of 3–4 ft. Flowers orange-yellow. Open moist alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12–13,000 ft. Aug. 1922. S.W. Szechuan.

22200. **Zanthoxylum** sp. aff. **oxyphyllum,** Edgew. Semi-scandent spinous shrub of 12–16 ft. In fruit. In thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

22201. **Gentiana aprica,** Decne. vel aff. Plant of ½–1 inch. Flowers blue. Dry, stony meadows on the Lichiang range. Lat. 27° 10′ N. Long. 100° 10′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22204. **Primula Littoniana,** Forrest. Plant of 14–16 inches. Flowers deep purplish-blue. Open moist alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11–12,000 ft. Aug. 1922. S.W. Szechuan.

22205. **Marsdenia oreophila,** W. W. Sm. Scandent leathery-stemmed plant of many feet. Flowers creamy-yellow. On scrub in dense thickets by streams on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. Aug. 1922. S.W. Szechuan.

22207. **Vitis betulifolia,** Diels et Gilg. vel aff. Scandent shrub of 6–18 ft. In fruit. On scrub in thickets by streams on the mountains west of Mu-li. Lat. 28° 18′ N. Long. 100° 42′ E. Alt. 9–10,000 ft. July 1922. S.W. Szechuan.

22208. **Habenaria diceras,** Schltr. Plant of 7–10 inches. Flowers green. Stony barren meadows on the Lichiang range. Lat. 27° 10′ N. Long. 100° 10′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

22209. **Cotoneaster.** Shrub of 5–9 ft. In fruit, fruits black. Margins of thickets and by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. Aug. 1922. N.W. Yunnan.

22210. **Lilium Delavayi,** Franch. forma. Duplicate in immature fruit of F. No. 21578. Same locality and habitat. Aug. 1922. N.W. Yunnan.

22211. **Saxifraga brachypoda,** D. Don, var. **fimbriata,** Engl. et Irmsch. Plant of 5–10 inches. Flowers bright yellow. Open stony moorland and on boulders and rocks on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 44′ E. Alt. 11,000 ft. Aug. 1922. N.W. Yunnan.

22212. **Rosa.** Spinous shrub of 4–8 ft. In fruit, fruits orange-red. By water-courses on the Lichiang range. Lat. 27° 10′ N. Long. 100° 10′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

22213. **Lilium Davidi,** Duchart. In cultivation over the whole of the Lichiang valley, bulbs edible. Lat. 27° N. Long. 100° 10′ E. Alt. 8–9,000 ft. Aug. 1922. N.W. Yunnan.

22214. **Cyananthus longiflorus,** Franch. Semi-prostrate plant of 6–8 inches. Flowers immature, probably blue (!). Open, stony meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11,000 ft. Aug. 1922. N.W. Yunnan.

22215. **Saxifraga sediformis,** Engl. et Irmsch. Matted plant of 4–6 inches. Flowers golden-yellow. Open, stony meadows and on screes on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. Aug. 1922. N.W. Yunnan.

22216. **Saussurea.** Plant of 2–2½ inches. Flowers deep ruddy purple. Open stony and very moist or boggy meadows on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 14,000 ft. Aug. 1922. N.W. Yunnan.

22217. **Senecio oreotrephes,** W. W. Sm. Plant of 16–20 inches. Flowers deep orange, phyllaries purple. Open alpine meadows on the margins of scrub on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. Aug. 1922. N.W. Yunnan.

22218. **Cornus alsophila,** W. W. Sm. Shrub of 6–18 ft. In fruit. In thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

22219. **Saxifraga sediformis,** Engl. et Irmsch. Matted plant of 2–3 inches. Flowers golden-yellow. On rocks and ledges of cliffs on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 14,000 ft. Aug. 1922. N.W. Yunnan.

22220. **Viburnum flavescens,** W. W. Sm. Shrub of 6–18 ft. In fruit, fruits light to very dark crimson, edible. In mixed thickets and the margins of forests on the Lichiang range. Lat. 27° 15′ N. Long. 100° 10′ E. Alt. 9–12,000 ft. Aug. 1922. N.W. Yunnan.

22221. **Stachyurus himalaicus,** Hook. f. et Thoms. Shrub of 10–20 ft. Flowers immature. By pools and streams in thickets on the Lichiang range. Lat. 27° 15′ N. Long. 100° 10′ E. Alt. 9–11,000 ft. Aug. 1922. N.W. Yunnan.

22222. **Sedum tenuifolium,** Franch. Tufted dwarf plant of 1–2 inches. Foliage ruddy, flowers (?). Open, stony meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11–12,000 ft. Aug. 1922. S.W. Szechuan.

22223. **Sedum bracteatum,** Diels. Plant of 4–7 inches. Flowers bright golden-yellow. Open screes and on ledges of cliffs on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Aug. 1922. S.W. Szechuan.

22224. **Erigeron multiradiatus,** Benth. Plant of 14–20 inches. Ray florets, bright ruddy purple, disc florets dull orange. On the margins of thickets on alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12–13,000 ft. Aug. 1922. S.W. Szechuan.

22225. **Aconitum brevicalcaratum,** Diels. Plant of 2½–4½ ft. Flowers deep ruddy purple, sheened with golden down. Open alpine meadows on the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11–12,000 ft. Aug. 1922. N.W. Yunnan.

22226. **Senecio plantaginifolius,** Franch. Plant of 1–2½ ft. Flowers fragrant, bright golden-yellow. Open marshy meadows on the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

22227. **Prunus.** Shrub of 10–15 ft. In fruit, fruits dark crimson. Open thickets in side valleys on the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22228. **Betula japonica,** Sieb. var. Graceful shrub of 15–30 ft. In fruit. Open mixed and pine forests on the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11–12,000 ft. Aug. 1922. N.W. Yunnan.

22229. **Cotoneaster.** Dwarf shrub of 8–18 inches. In fruit, fruits bright crimson. Open stony meadows on the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22230. **Betula Delavayi,** Franch. var. Shrub of 6–12 ft. In fruit. In thickets in side valleys on the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22231. **Castanopsis Delavayi,** Franch. Tree of 30–60 ft. In fruit. Forming groves on the hills east of Lichiang. Lat. 27° N. Long. 100° 12′ E. Alt. 8–9,000 ft. Sept. 1922. N.W. Yunnan.

22232. **Anaphalis adnata,** DC. Plant of 14–18 inches. Phyllaries rosy-pink. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 13,000 ft. Sept. 1922. N.W. Yunnan.

22233. **Scleria pergracilis,** Kunth. Plant of 6–10 inches. All parts giving a strong lemon-like odour when bruised. Forming large patches on moist alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22234. **Clematis trullifera,** Finet et Gagnep. Scandent shrub of 6–12 ft. Flowers fragrant, dull creamy-yellow. On scrub in thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22235. **Celastrus** sp. aff. **gemmata,** Rehd. et Wils. Scandent shrub of 10–18 ft. In fruit. Seeds scarlet, fruits yellow. On scrub in thickets on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Sept. 1922. N.W. Yunnan.

22236. **Pterocarya Forrestii,** W. W. Sm. Shrub or tree of 20–45 ft. In fruit. In mixed forests in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22237. **Apios carnea,** Benth. Scandent shrub of 12–30 ft. Flowers pale purplish-rose. On trees and scrub in thickets on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Sept. 1922. N.W. Yunnan.

22238. **Begonia sinensis,** A. DC. vel aff. Plant of 20–24 inches. In fruit. Shady banks and rocks in mixed forests and in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 9,000 ft. Sept. 1922. N.W. Yunnan.

22239. **Acer Forrestii,** Diels, forma. Shrub or tree of 20–40 ft. In fruit. In mixed forests in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22240. **Iris.** Plant of 1 ft. In fruit. Open stony alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22241. **Senecio koualapensis,** Franch. Plant of 12–30 inches. Flowers yellow. Shady situations on the margins of thickets on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22242. **Ampelopsis heterophylla,** Sieb. et Zucc. vel v. aff. Scandent shrub of 10–12 ft. In fruit. Amongst scrub in thickets on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22243. **Myrsine semiserrata,** Wall. Shrub of 4–5 ft. In fruit, fruits pale purple. Margins of shady mixed forests in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 9,000 ft. Sept. 1922. N.W. Yunnan.

22244. **Tetrastigma.** Scandent shrub of 20 ft. In fruit. On scrub in thickets on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9,000 ft. Sept. 1922. N.W. Yunnan.

22245. **Schizandra propinqua,** Hook. f. et Thoms. Scandent shrub of 30 ft. In fruit, on trees in thickets and mixed forests on the Chien-chuan divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9,000 ft. Sept. 1922. N.W. Yunnan.

22246. **Primula sinolisteri,** Balf. f. Plant of 4–5 inches. In fruit. On rocks and banks in shady mixed forests in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22247. **Senecio oreotrephes,** W. W. Sm. Plant of 12–16 inches. Flowers orange, phyllaries ruddy purple. Open situations on the margins of scrub and forest on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

[= F. No. 22217.]

22248. **Alectoria** sp.? On shady trees and rocks on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22249. **Cassiope selaginoides,** Hook. f. et Thoms. Matted plant of 4–6 inches. In fruit. On rocks and rocky slopes in side valleys amongst dwarf scrub on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

22250. **Primula muscarioides,** Hemsl. var. Plant of 14–16 inches. In fruit. Open stony meadows and amongst scrub by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22251. **Cercis.** Shrub of 20–40 ft. Foliage only. In mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22252. **Saxifraga macrostigma,** Franch. var. **typica,** Engl. et Irmsch. fa. **gracillima,** Engl. et Irmsch. Tufted plant of 3–4 inches. Flowers deep ruddy orange. Moist, stony, alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. Sept. 1922. N.W. Yunnan.

22253. **Euptelea pleiosperma,** Hook. f. et. Thoms. Shrub of 10–15 ft. In fruit. In mixed thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22254. **Cremanthodium campanulatum** (Franch.), Diels. Plant of 8–14 inches. Phyllaries deep purple green. Open alpine meadows and slopes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 14,000 ft. Sept. 1922. N.W. Yunnan.

22255. **Sabia latifolia,** Rehd. et Wils. Shrub of 5–8 ft. In immature fruit. Amongst mixed scrub by streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Sept. 1922. N.W. Yunnan.

22256. **Pouzolzia** sp.? Shrub of 4–6 ft. Branches arched. Foliage only. In and on the margins of thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22257. **Aconitum** sp. aff. **macrorhynchum,** Turcz. Plant of 16–24 inches. Flowers rich indigo-purple. Amongst scrub and heavy grass on the margins of thickets on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22258. **Cassiope fastigiata,** D. Don. Plant of 6–9 inches. In fruit. Beneath scrub on open rocky slopes and moorland on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

22259. **Potentilla** sp. aff. **fruticosa,** Linn. Shrub of 3–4½ ft. Flowers white. In fruit. Open alpine slopes amongst dwarf scrub on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22260. **Didissandra taliensis,** Craib, fa. **robustior,** Craib, vel. aff. Duplicate in fruit of F. No. . Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11,000 ft. Sept. 1922. N.W. Yunnan.

22261. **Symplocos crataegoides,** Ham. Shrub of 6–12 ft. In fruit. Open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22262. **Parasyringa sempervirens,** W. W. Sm. Shrub of 4–10 ft. In fruit. In open thickets on rocky slopes in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Sept. 1922. N.W. Yunnan.

22263. **Clematis grata,** Wall. vel v. aff. Scandent shrub of many feet. Flowers dull creamy-white. On scrub in thickets by streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22264. **Trachelospermum cathayanum,** Schneid. Scandent trailing shrub of 12–20 ft. In fruit. On rocks and cliffs in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. Sept. 1922. N.W. Yunnan.

22265. **Vaccinium spicigerum,** W. W. Sm. Duplicate in fruit of F. No. . Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22266. **Pittosporum floribundum,** W. et A. Duplicate in fruit of F. No. . Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22267. **Trachelospermum,** sp. Duplicate of F. No. . = F. No. 22264 (?) but smaller leaved. Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Sept. 1922. N.W. Yunnan.

22268. **Saxifraga cinerascens,** Engl. et Irmsch. Tufted plant of 2–4 inches. Flowers orange. Open humus-covered boulders and ledges of cliffs on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40° E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

[Note curious white cartilage on leaf margins.]

22269. **Saxifraga macrostigma,** Franch. var. **Georgeana,** Engl. et Irmsch. fa. **longipila,** Engl. et Irmsch. Matted plant of 2–3½ inches. Flowers orange. Open, stony moist alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13,000 ft. Sept. 1922. N.W. Yunnan.

22270. **Cotoneaster.** Shrub of 6–8 ft. In fruit, fruits dark crimson. Open conifer forests and thickets on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22271. **Cotoneaster.** Semi-prostrate shrub of 1–2 ft. Flowers dark crimson. In immature fruit. On rocks and cliffs in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22272. **Abies chensiensis,** Van Tieghem. Shrub or tree of 40–50 ft. Foliage only. In mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22273. **Litsea citrata,** Blume, vel aff. Shrub of 20–30 ft. In fruit, fruits black, aromatic, as also is the bark and the foliage. In open thickets in side valleys on the eastern flank of the Lichiang range. Lat. 27° 15′ N. Long. 100° 10′ E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

22274. **Tanacetum yunnanense,** J. F. Jeff. Pungently aromatic plant of 12–16 inches. Flowers deep orange. Rocky alpine meadows and humus-covered boulders on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22275. **Codonopsis** sp. aff. **Tangshan,** Oliv. Scandent plant of 6–10 ft. Flowers pure clear blue. On scrub on the margins of thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22276. **Aster** sp. aff. **yunnanensis,** Franch. Plant of 3–5 inches. Ray florets deep purplish-blue, disc florets deep green-orange. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. Sept. 1922. N.W. Yunnan.

22277. **Schizandra sphenanthera,** Rehd. et Wils. Duplicate in fruit of F. No. . Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22278. **Actinidia venosa,** Rehd. et Wils. Duplicate in fruit of F. No. . Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22279. **Sapindaceae?** Shrub or tree of 20–40 ft. Foliage only In open mixed forests in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22280. **Abies chensiensis,** Van Tieghem. Tree of 50–80 ft. In mixed and conifer forests in side valleys on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 11′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22281. **Codonopsis Forrestii,** Diels. Twining plant of 4–9 ft. Flowers blue. On scrub in thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22282. **Briggsia amabilis,** Craib. Plant of 9–14 inches. Flowers dull orange with brownish-orange markings, on trees and rocks in forests in shady side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22283. **Actinidia** sp. aff. **callosa,** Lindl. Duplicate of 21521, in full fruit. On scrub in mixed forest on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22284. **Cotoneaster.** Shrub of 2–3 ft. In fruit, fruits crimson. Dry, open, stony slopes on the eastern flank of the Lichiang range. Lat. 27° 15′ N. Long. 100° 10′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22285. **Cremanthodium Helianthus** (Franch.). Plant of 16–20 inches. Flowers fragrant. Ray florets dull orange, disc florets green-orange. Open, stony alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13,000 ft. Sept. 1922. N.W. Yunnan.

22286. **Meconopsis betonicifolia,** Franch. Duplicate in fruit of F. No. 21573. Same locality and situation. Sept. 1922. N.W. Yunnan.

22287. **Primula aurantiaca,** W. W. Sm. et Forrest. Duplicate of F. No. 21501. Same locality and situation. Sept. 1922. N.W. Yunnan.

22288. **Polygonum runcinatum,** Ham. Plant of 2–2½ feet. Flowers rose-pink. Amongst grass and scrub in side valleys by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Sept. 1922. N.W. Yunnan.

[I have a dim recollection of having first collected this in the arid regions of the Salwin valley in 1905]

22289. **Zanthoxylum** sp. aff. **oxyphyllum,** Edgew. Scandent spinous shrub of 10–15 ft. In fruit. In dense thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Sept. 1922. N.W. Yunnan.

[May be the same as F. No. 22200.]

22290. **Saxifraga tsangschanensis,** Franch. Tufted plant of 3–6 inches. Flowers orange. Open, moist, alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 13,000 ft. Sept. 1922. N.W. Yunnan.

22291. **Delphinium likiangense,** Franch. Plant of 12–18 inches. Flowers deep soft blue, deliciously scented with a fragrance similar to Roman hyacinths. Open limestone screes and ledges of cliffs on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 11′ E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

22292. **Gerbera nivea,** Benth. Plant of 6–12 inches. Flowers faintly fragrant. Ray florets interior rose-pink, exterior purplish-rose, phyllaries deep rose-purple. In half shade in open conifer forests on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 11′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22293. **Clematis yunnanensis,** Franch. Scandent shrub of 9–16 ft. Flowers dull soft purplish-yellow. On scrub and in thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22294. **Evodia hupehensis,** Dode. Shrub of 20 ft. In fruit. In thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22296. **Iris.** Duplicate in fruit of F. No. 21945. Open, moist, alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22297. **Clematis montana,** Ham. Duplicate in fruit of F. No. . Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22298. **Meconopsis impedita,** Prain. Duplicate in fruit of F. No. . Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. Sept. 1922. N.W. Yunnan.

22301. **Gentiana phyllocalyx,** Clarke, vel v. aff. Plant of 4–8 inches. In fruit. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. Sept. 1922. N.W. Yunnan.

22302. **Salix** sp. aff. **flabellaris,** Anderss. Dwarf creeping shrub of 3–6 inches. Open, moist, alpine moorland on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

22303. **Saxifraga Forrestii,** Engl. et Irmsch. Plant of 3–6 inches. Flowers orange-yellow. On humus-covered boulders and ledges of cliffs on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 13,000 ft. Sept. 1922. N.W. Yunnan.

22304. **Spiraea** sp. aff. **palmata,** Thunb. Plant of 4 feet. Flowers creamy-white, fragrant. Margins of thickets and by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22305. **Achillea sibirica,** Ledeb. var. Plant of 3 ft. Flowers greyish - white. Open meadows on the margins of thickets on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11,000 ft. Sept. 1922. N.W. Yunnan.

22306. **Corydalis gracilis,** Franch. var. vel aff. Straggling plant of 12–20 inches. Flowers dark orange. Grassy stony slopes amongst scrub on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11,000 ft. Sept. 1922. N.W. Yunnan.

22307. **Senecio** sp. aff. **japonica,** Sch.-Bip. Plant of 2½–3 ft. Florets steel-grey. Open, stony slopes amongst scrub and heavy grass on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 13,000 ft. Sept. 1922. N.W. Yunnan.

22308. **Meconopsis integrifolia,** Franch. var. **brevistyla,** Prain. Plant of ? Foliage only. Open, alpine corries on rocky slopes on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 14,000 ft. Sept. 1922. N.W. Yunnan.

22309. **Syringa** sp. aff. **reflexa,** Schneid. Shrub of 12–18 ft. In fruit. Margins of mixed thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11,000 ft. Sept. 1922. N.W. Yunnan.

22310. **Diapensia** sp. Mat plant of 6–14 inches diameter. Foliage only. On open, peaty, moist moorland on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. Sept. 1922. N.W. Yunnan.

22311. **Celastrus.** Scandent shrub of 20–30 feet. In fruit, seeds orange-yellow. Open situations in thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22312. **Begonia sinensis,** A. DC. vel aff. Plant of 2 ft. Flowers rose-pink. Shady banks in thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22313. **Polygala arillata,** Buch.-Ham. Shrub of 3–6 ft. Flowers dull greenish-orange, tipped brownish-orange. Thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22314. **Pyrus.** Shrub of 18 25 ft. Fruits red. Open thickets in side valleys on the N.W. flank of the Lichiang range.

22315. **Codonopsis meleagris,** Diels. Plant of 14–20 inches. Flowers yellowish, washed and netted purple. In and on the margins of conifer forests on the Lichiang range. Lat. 27° 20′ N. Long. 100° 11′ E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

22316. **Crataegus** sp. Spinous shrub of 6–8 ft. Foliage only. In thickets on the hills S.W. of Lichiang. Lat. 26° 45′ N. Long. 100° 10′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22317. **Symplocos theifolia,** D. Don, vel v. aff. Shrub of 10–18 ft. Flowers immature. Open thickets by streams on the Chien-chuan Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22318. **Primula aurantiaca,** W. W. Sm. et Forrest. Duplicate in fruit of F. No. 21497. Same locality and situation. Sept. 1922. N.W. Yunnan.

22319. **Clematis trullifera,** Finet et Gagnep. Scandent shrub of 10–18 ft. Flowers fragrant, dull creamy-yellow. On scrub in thickets and in the open by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22321. **Saussurea taraxacifolia,** Wall. vel aff. Plant of 2½–4 inches. Flowers deep rosy-purple. Open, stony alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 14,000 ft. Sept. 1922. N.W. Yunnan.

22322. **Castanea mollissima,** Blume. Tree of 30–60 ft. In fruit. In open mixed forest in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 7,000 ft. Sept. 1922. N.W. Yunnan.

22323. **Juniperus Wallichiana,** Hook. f. var. **meionocarpa,** Hand.-Mzt. Shrub of 20–30 ft. In fruit. In open mixed and conifer forests in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Sept. 1922. N.W. Yunnan.

22324. **Viburnum kansuense,** Batal. Shrub of 4–6 ft. In fruit, fruits orange-scarlet. Open thickets and on the margins of forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22326. **Chirita orbicularis,** W. W. Sm. Duplicate in fruit of F. No.   . Mountains north of Yung-peh. Lat. 26° 45′ N. Long. 100° 45′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22327. **Aconitum** sp. aff. **venatorium,** Diels. Plant of 2½–3 ft. Flowers deep dull rosy-purple. Open rocky slopes and in thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22328. **Schefflera dumicola,** W. W. Sm. Shrub of 12–20 ft. Flowers creamy-yellow. In mixed thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22329. **Ribes.** Shrub of 2–4 ft. In fruit, fruits black. Open scrub-clad slopes on the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

22330. **Ribes.** Shrub of 6–9 ft. In fruit, fruits crimson. Open thickets in rocky side valleys on the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 13–14,000 ft. Sept. 1922. N.W. Yunnan.

22331. **Cotoneaster.** Shrub of 5–7 ft. In fruit, fruits black. Open thickets in side valleys on the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

22332. **Codonopsis efilamentosa,** W. W. Sm. vel aff. Scandent plant of 4–8 ft. Flowers blue. Open thickets on scrub in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22333. **Gaultheria trichophylla,** Royle. Shrub of 4–7 inches. In fruit, fruits white. On banks amongst scrub and on alpine moorland on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

22336. **Sedum.** Plant of 4–6 inches. Flowers creamy-white. Ledges of cliffs and on boulders on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

[= F. No. 22096.]

22337. **Rosa.** Duplicate in fruit (mature) of F. No. . Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. . Sept. 1922. N.W. Yunnan.

22338. **Pyrus.** Duplicate in fruit of F. No. . Chien-chien-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Sept. 1922. N.W. Yunnan.

22339. **Quercus dentata,** Thunb. Shrub or tree of 30–50 ft. In fruit. In mixed forests on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22340. **Quercus variabilis,** Blume. Shrub or tree of 30–50 ft. In fruit. In mixed forests on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22341. **Quercus glauca,** Thunb. Shrub of 30–40 ft. In fruit. In mixed forests on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

22342. **Dracocephalum Forrestii,** W. W. Sm. var. Shrubby plant of 10–20 inches. Flowers violet-purple, fragrant. Open, stony slopes on the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22343. **Plectranthus Forrestii,** Diels. Plant of 2–3 ft. Flowers blue, foliage aromatic. Open rocky meadows and on the margins of thickets on the Lichiang range. Lat. 27° 15′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22344. **Plectranthus Forrestii,** Diels. Plant of 2–3 ft. Foliage aromatic. In fruit. Open rocky slopes amongst scrub on the Lichiang range. Lat. 27° 15′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22345. **Hemerocallis Forrestii,** Diels, vel aff. In fruit. On limy meadows amongst scrub on the Lichiang range. Lat. 27° 15′ N. Long. 100° 12′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22346. **Euonymus** sp. aff. **porphyreus,** Loesen. In thickets, side valleys on the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22347. **Delphinium Forrestii,** Diels. Plant of 2 ft. Flowers dull transparent, bluey-grey, lined pale blue. Open, stony alpine meadows on the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 14–15,000 ft. Sept. 1922. N.W. Yunnan.

22349. **Pyrus.** Shrub of 20–25 ft. In fruit. In mixed thickets on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11,000 ft. Sept 1922. N.W. Yunnan.

22350. **Abies Forrestii,** Craib. Tree of 40–60 ft. In fruit. In conifer forests on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13,000 ft. Sept. 1922. N.W. Yunnan.

22351. **Pyrus.** Duplicate in fruit of F. No. . Fruits white. Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. . Sept. 1922.

22352. **Pyrus.** Shrub of 10–15 ft. Fruits white, flushed rose. Open, stony slopes in side valleys on the Lichiang range. Lat. 27° 15′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22353. **Rosa.** Spinous shrub of 4–5 ft. In fruit, fruits large, orange-scarlet. Flowers rose (?). Amongst scrub on rocky slopes in side valleys on the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22354. **Anemone rupicola,** Camb. Lichiang range. Lat. 27° 15′ N. Long. 100° 12′ E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

22355. **Saxifraga Forrestii,** Engl. et Irmsch. Plant of 2–5 inches. Flowers orange-yellow. Moist, rocky meadows and on ledges of cliffs on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22356. **Allium yunnanense,** Diels. Grass-like plant of 6–10 inches. Flowers magenta-rose. Open rocky meadows and slopes on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12–13,000 ft. Sept. 1923. N.W. Yunnan.

22357. **Saussurea.** Plant of 20–24 inches. Flowers rosy-purple. Open stony meadows and on the margins of scrub on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 13,000 ft. Sept. 1922. N.W. Yunnan.

22358. **Calamintha barosma,** W. W. Sm. Shrubby plant of 4–8 inches. Flowers rose. Foliage strongly aromatic. Open rocky slopes and meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22359. **Cotoneaster.** Semi-prostrate shrub of 1–2 ft. In fruit, fruits scarlet. Open rocky slopes and meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22360. **Saussurea vestita,** Franch. Plant of 14–20 inches. Flowers deep ruddy purple. Open stony meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

22361. **Primula dryadifolia,** Franch. Alpine meadows and screes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 14,000 ft. Sept. 1922. N.W. Yunnan.

22362. **Delphinium yunnanense,** Franch. vel aff. Plant of 18 24 inches. Flowers deep purple-blue. Open alpine meadows and slopes on the Lichiang range. Lat. 27° 20′ N. Long. 100° 12′ E. Alt. 14,000 ft. Sept. 1922. N.W. Yunnan.

22363. **Pleurospermum Govanianum,** Benth. vel aff. Plant of 18–20 inches. Flowers dull dark green. Open stony alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 100° 10′ E. Alt. 13,000 ft. Sept. 1922. N.W. Yunnan.

22364. **Syringa** sp. aff. **reflexa,** Schneid. Shrub of 10–12 ft. In fruit. In scrub and thickets in side valleys on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22365. **Lonicera cyanocarpa,** Franch. Shrub of 4–5 ft. In fruit, fruits blue-black. In thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22366. **Viburnum betulifolium,** Batal. Duplicate in fruit of F. No. 21481. Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Sept. 1922. N.W. Yunnan.

22367. **Pyrus.** Shrub of 20–30 ft. In fruit, fruits brown. In open thickets and mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22368. **Aconitum brachypodum,** Diels. Plant of 1½–2 feet. Flowers deep purplish-blue. Open, stony slopes and meadows and on ledges of cliffs in gullies on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

22369. **Primula Dubernardiana,** G. Forrest, var. Cushion plant of 3–4 inches in height, 12–20 in diameter. Flowers white, tube yellow-green. On ledges and in crevices of dry limestone cliffs on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22371. **Bupleurum longicaule,** Wall. var. **Francheti,** Boissieu. Plant of 10–15 inches. Flowers olive-yellow. Open, stony alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22373. **Saussurea.** Plant of 16–20 inches. Flowers rosy-purple. Open alpine meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 13,000 ft. Sept. 1922. N.W. Yunnan.

22374. **Sedum.** Fleshy-leaved mat plant of 2 inches. Flowers green. On ledges of cliffs and humus-covered boulders in shady side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13,000 ft. Sept. 1922. N.W. Yunnan.

22375. **Primula muscarioides,** Hemsl. var. Duplicate in fruit of F. No. . Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. . Sept. 1922. N.W. Yunnan.

22376. **Euonymus porphyreus,** Loesen. vel aff. Duplicate in fruit of F. No. . Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Sept. 1922. N.W. Yunnan.

22377. **Primula maikhaensis,** Balf. f. et Forrest. Plant of 1–2 inches. In fruit. Duplicate of F. No. . Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11,000 ft. Sept. 1922. N.W. Yunnan.

22378. **Delphinium grandiflorum,** Linn. var. Plant of 6–12 inches. Flowers clear deep blue. Open stony pasture on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11,000 ft. Sept. 1922. N.W. Yunnan.

22379. **Saxifraga** sp. aff. **pratensis,** Engl. et Irmsch. Plant of 9–12 inches. Flowers deep crimson. Open rocky slopes and stony meadows in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22380. **Acer Forrestii,** Diels. Shrub of 20–40 ft. In fruit. In open thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22381. **Euonymus oresbius,** W. W. Sm. vel v. aff. Shrub of 3–6 ft. In fruit, seeds crimson. In thickets on stony slopes on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Sept. 1922. S.W. Szechuan.

22382. **Tanacetum Pallasianum,** Trautv. et Mey. Aromatic plant of 1½–2 feet. Flowers orange-yellow. Open rocky meadows and on ledges of cliffs in side valleys on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Sept. 1922. S.W. Szechuan.

22383. **Spiraea mollifolia,** Rehder. Duplicate in fruit of F. No. . Mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. . Sept. 1922. S.W. Szechuan.

22384. **Aster brachytrichus,** Franch. Duplicate in fruit of F. No. . Mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Sept. 1922. S.W. Szechuan.

22385. **Tanacetum Delavayi,** Franch. Plant of 3–7 inches. Faintly aromatic. Flowers orange. Open stony pasture on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11–12,000 ft. Sept. 1922. S.W. Szechuan.

22386. **Elsholtzia** sp. aff. **luteola,** Diels. Aromatic plant of 3–6 inches. Flowers lavender-rose. Open, stony meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. Sept. 1922. S.W. Szechuan.

22387. **Lysimachia vulgaris,** Linn. var. Duplicate in fruit of F. No. 22071. Mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Sept. 1922. S.W. Szechuan.

22388. **Gnaphalium.** Aromatic plant of 2–3 ft. Flowers orange, phyllaries brassy-yellow. Margins of scrub and thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Sept. 1922. S.W. Szechuan.

22389. **Saussurea.** Plant of 1½–2 ft. Flowers deep rosy-purple. Open, stony slopes and in thickets on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11,000 ft. Sept. 1922. N.W. Yunnan.

22390. **Anaphalis adnata,** DC. Plant of 2 or fully 2 feet. Flowers greyish-white, phyllaries flushed rose-pink. Open, dry, stony meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11,000 ft. Sept. 1922. N.W. Yunnan.

22391. **Psoralea corylifolia,** Linn. Plant of 2–3 ft. Flowers white, faintly tipped blue. Open situations amongst scrub on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. Sept. 1922. S.W. Szechuan.

22392. **Zehneria mysorensis,** Arn. Duplicate of F. No. in fruit. Mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Sept. 1922. S.W. Szechuan.

22393. **Lactuca** sp. aff. **hastata,** DC. Plant of 1½–2 feet. Flowers very pale purplish-blue, immature. Amongst scrub by streams on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12,000 ft. Sept. 1922. S.W. Szechuan.

22394. **Styrax langkongensis,** W. W. Sm. vel aff. Shrub of 3–6 ft. In fruit. Open, dry, stony slopes amongst scrub and in open pine forests on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9–10,000 ft. Sept. 1922. S.W. Szechuan.

22395. **Berberis** sp. Spinous shrub of 3–5 ft. In fruit, fruits red. Open situations in side valleys on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11–12,000 ft. Sept. 1922. S.W. Szechuan.

22396. **Parasenecio Forrestii,** W. W. Sm. et J. Small. Duplicate in fruit of F. No. . Mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. . Sept. 1922. S.W. Szechuan.

22397. **Acer tetramerum,** Pax. Shrub of 20–35 ft. In fruit. In thickets in side valleys on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Sept. 1922. S.W. Szechuan.

22398. **Buddleia myriantha,** Diels, vel aff. Shrub of 5–6 ft. In fruit. Open thickets in side valleys on the Lichiang range. Lat. 27° 15′ N. Long. 100° 11′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22399. **Circaea alpina,** Linn. var. Plant of 8–12 inches. In fruit. Shady situations in thickets by streams on the Lichiang range. Lat. 27° 15′ N. Long. 100° 11′ E. Alt. 11,000 ft. Sept. 1922. N.W. Yunnan.

22400. **Bupleurum tenue,** Ham. ex D. Don. Plant of 4–12 inches. Flowers olive-yellow. Open stony pasture on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

22401. **Petrocosmea flaccida,** Craib. Duplicate in fruit of F. No. . Mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 48′ E. Sept. 1922. S.W. Szechuan.

22402. **Berberis** sp. aff. **Jamesiana,** Forrest et W. W. Sm. Spinous shrub of 2–3 ft. In fruit, fruits dull red. On ledges of cliffs and stony slopes on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Sept. 1922. S.W. Szechuan.

22403. **Remusatia vivipara,** Schott. vel aff. Plant of 6–14 inches. In fruit. Open stony slopes in side valleys on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. Sept. 1922. S.W. Szechuañ.

22404. **Viburnum congestum,** Rehder. Shrub of 3–5 ft. In fruit. In thickets by streams on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9–10,000 ft. Sept. 1922. S.W. Szechuan.

22405. **Chirita pumila,** D. Don. Plant of 5–8 inches. Flowers pale blue, lined green. Moist shady banks and on rocks by streams in side valleys on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. Sept. 1922. S.W. Szechuan.

22406. **Leucosceptrum canum,** Sm. Shrub of 20 ft. Flowers purplish-rose. Dry open situations in thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9–10,000 ft. Sept. 1922. S.W. Szechuan.

22407. **Fluggea microcarpa,** Blume. Shrub of 3–5 ft. In fruit. Dry open situations amongst scrub on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9,000 ft. Sept. 1922. S.W. Szechuan.

22408. **Microtoena urticifolia,** Hemsl. vel aff. Shrub of 4–5 ft. Flowers white, tinged crimson-rose. Open thickets by streams on the mountains around Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9–10,000 ft. Sept. 1922. S.W. Szechuan.

22409. **Desmodium praestans,** G. Forrest. Shrub of 6–12 ft. Flowers purplish-rose. Dry situations in thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9–10,000 ft. Sept. 1922. S.W. Szechuan.

22410. **Primula nutans,** Franch. Mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11–12,000 ft. Sept. 1922. S.W. Szechuan.

22411. **Premna acutata,** W. W. Sm. Shrub of 4–5 ft. In fruit, fruits black. Open thickets by streams on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9,000 ft. Sept. 1922. S.W. Szechuan.

22412. **Euonymus acanthocarpus,** Franch. Shrub of 4–7 ft. In fruit. In thickets on dry rocky slopes on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Sept. 1922. S.W. Szechuan.

22413. **Didymocarpus (Roettlera) yunnanensis,** Franch. Plant of 6–10 inches. Flowers deep ruddy-purple. Open, shady dry situations in thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. Sept. 1922. S.W. Szechuan.

22414. **Campylotropis Balfouriana** (Diels), Schneid. Shrub of 4–9 ft. Flowers light canary-yellow. Open dry hill-sides amongst scrub on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 8–9,000 ft. Sept. 1922. S.W. Szechuan.

22415. **Olea** sp. vel **Ligustrum** sp. Duplicate in fruit of F. No. . Mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 48′ E. Alt. 10,000 ft. Sept. 1922. S.W. Szechuan.

22416. **Begonia Labordei,** Lévl. vel aff. Plant of 4–9 inches. Flowers white, flushed pink. Shady rocks by streams on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 48′ E. Alt. 9–10,000 ft. Sept. 1922. S.W. Szechuan.

22417. **Bauhinia** sp. aff. **densiflora,** Franch. Duplicate in fruit of F. No. . Mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 48′ E. Sept. 1922. S.W. Szechuan.

22418. **Strobilanthes Dielsianus,** W. W. Sm. Duplicate in fruit of F. No. . Mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 48′ E. Alt. . Sept. 1922. S.W. Szechuan.

22419. **Sophora** sp. Tree of 40–60 ft. In fruit. In mixed forests by streams on the mountains north of Yung-peh. Lat. 26° 40′ N. Long. 100° 45′ E. Alt. 9,000 ft. Sept. 1922. N.W. Yunnan.

22422. **Prunus.** Duplicate of F. No. . Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Oct. 1922. N.W. Yunnan.

22423. **Euonymus** sp. aff. **porphyreus,** Loesen. Duplicate of F. No. in fruit. Oct. 1922. N.W. Yunnan.

22424. **Aster.** Plant of 18–25 inches. Ray florets pale blue, disc florets orange-yellow. Open barren slopes on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 48′ E. Alt. 10,000 ft. Oct. 1922. S.W. Szechuan.

22425. **Euonymus** sp. aff. **porphyreus,** Loesen. Duplicate in fruit of No. . Oct. 1922. N.W. Yunnan.

22426. **Primula sinopurpurea,** Balf. f. Duplicate of F. No. in fruit. Mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Sept. 1922. S.W. Szechuan.

22427. **Androsace spinulifera,** Knuth. Duplicate of F. No. in fruit. Mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. . Sept. 1922. S.W. Szechuan.

22428. **Daphne calcicola,** W. W. Sm. vel aff. Dwarf shrub of 2–3 inches. Flowers (?). Said to be yellow. Dry, stony slopes and on cliffs on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 12,000 ft. Sept. 1922. S.W. Szechuan.

22429. **Saussurea** sp. aff. **subulata,** Clarke. Plant of ½–1 inch. Flowers deep ruddy purple. On barren alpine moorland on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14,000 ft. Sept. 1922. S.W. Szechuan.

22430. **Senecio.** Duplicate in fruit of No. . Mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Sept. 1922. S.W. Szechuan.

22431. **Saxifraga Hirculus,** Linn. var. **typica,** Hook. fa. **major,** Engl. et Irmsch. Duplicate in fruit of F. No. . Mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Sept. 1922. S.W. Szechuan.

22432. **Saxifraga Forrestii,** Engl. et Irmsch. Plant of 2½–5 ins. Flowers orange-yellow. Humus-covered rocks in shady side valleys on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 48′ E. Alt. 11,000 ft. Sept. 1922. S.W. Szechuan.

22433. **Trailliaedoxa gracilis,** W. W. Sm. et Forrest. Dry situations in side valleys on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 48′ E. Alt. 8–9,000 ft. Sept. 1922. S.W. Szechuan.

22434. **Anaphalis.** Shrubby plant of 1–1½ ft. Flowers greyish-white. Open, stony moorland and on ledges of cliffs on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14,000 ft. Sept. 1922. S.W. Szechuan.

22435. **Euonymus** sp. aff. **porphyreus,** Loesen. Duplicate in fruit of F. No. . Sept. 1922. S.W. Szechuan.

22436. **Primula** sp. (A form of *P. obconica,* Hance). Plant of 1½–3 inches. In fruit. On limy meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Sept. 1922. S.W. Szechuan.

22437. **Euonymus** sp. aff. **porphyreus,** Loesen. Duplicate in fruit of F. No. . Mountains S.E. of Yungning. Sept. 1922. S.W. Szechuan.

22438. **Rosa.** Duplicate in fruit of F. No. 21245. In fruit, fruits dull yellowish-scarlet. Same locality and situation. Sept. 1922. S.W. Szechuan.

22439. **Fraxinus chinensis,** Roxb. var. **acuminata,** Lingelsh. Duplicate in fruit of F. No. . Sept. 1922. S.W. Szechuan.

22441. **Sibiraea laevigata,** Maxim. Shrub of 3–4 ft. In fruit. Open, dry, rocky hillsides on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 12,000 ft. Sept. 1922. S.W. Szechuan.

22442. **Primula florida,** Balf. f. et Forrest. Duplicate in fruit of F. No. . Sept. 1922. N.W. Yunnan.

22443. **Pleurospermum Govanianum,** Benth. var. **bicolor,** Franch. Plant of 12–16 inches. Flowers dark olive-green. Alpine meadows on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 13,000 ft. Sept. 1922. S.W. Szechuan.

22444. **Cotoneaster.** Shrub of 4–6 inches. In fruit, fruits crimson. On open alpine meadows on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 14,000 ft. Sept. 1922. S.W. Szechuan.

22445. **Anaphalis.** Tufted plant of 12–16 inches. Flowers silvery-grey. Open stony alpine meadows on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 14,000 ft. Sept. 1922. S.W. Szechuan.

22446. **Viola Delavayi,** Franch. Plant of 4–8 inches. In fruit. On limy alpine pasture on the margins of thickets on the mountains east of Yungning. Lat. 27° 48′ N. Long. 101° E. Alt. 12,000 ft. Sept. 1922. S.W. Szechuan.

22447. **Campanula calcicola,** W. W. Sm. Semi-prostrate tufted plant of 3–5 inches. Flowers deep indigo-blue. On ledges and in crevices of shady limestone cliffs on the mountains N.E. of Yungning. Lat. 27° 50′ N. Long. 101° E. Alt. 12–13,000 ft. Sept. 1922. S.W. Szechuan.

22448. **Pyrus.** Shrub of 20–35 ft. In fruit. In mixed thickets in side valleys on the mountains N.E. of Yungning. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Sept. 1922. S.W. Szechuan.

22449. **Pyrus.** Duplicate in fruit of F. No. . Fruits dull brownish-crimson. Sept. 1922. S.W. Szechuan.

22450. **Valeriana Hardwickii,** Wall. Plant of 12–18 inches. Flowers white. On meadows on the margins of thickets and by streams on the mountains N.E. of Yungning. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Sept. 1922. S.W. Szechuan.

22451. **Lactuca.** Plant of 1–1½ ft. Flowers immature. Amongst scrub on the margins of shady forests on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Sept. 1922. S.W. Szechuan.

22452. **Primula Pauliana,** W. W. Sm. et Forrest. Duplicate in fruit of F. No. 22073. Sept. 1922. S.W. Szechuan.

22453. **Plectranthus** sp. Plant of 2–3 ft. Flowers blue (?). Open thickets and on the margins of forests on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Sept. 1922. S.W. Szechuan.

22454. **Ligustrum lucidum,** Ait. Duplicate in fruit of F. No. . Sept. 1922. S.W. Szechuan.

22455. **Symplocos paniculata,** Wall. Shrub of 6–8 ft. In fruit. Side valleys amongst scrub on the mountains N.E. of Yungning. Lat. 27° 50′ N. Long. 101° E. Alt. 9–10,000 ft. Sept. 1922. S.W. Szechuan.

22456. **Tremacron Forrestii,** Craib. Duplicate in fruit of F. No. . Sept. 1922. S.W. Szechuan.

22457. **Campanula chrysosplenifolia,** Franch. var. Plant of 8–12 inches. Flowers deep purple-blue. Open stony meadows on the margins of thickets and on rocky slopes on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11–12,000 ft. Sept. 1922. S.W. Szechuan.

22458. **Primula cernua,** Franch. Duplicate in fruit of F. No. . Sept. 1922. S.W. Szechuan.

22459. **Melampyrum chinense,** Dahl. Plant of 9–16 inches. In fruit. In dry shady pine and mixed forests on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11–12,000 ft. Sept. 1922. S.W. Szechuan.

22460. **Briggsia amabilis,** Craib. Plant of 10–12 inches. Flowers dull orange. On shady banks S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Sept. 1922. S.W. Szechuan.

22461. **Pyrus.** Shrub of 20–30 ft. In fruit, fruits dull crimson. In thickets by streams on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Sept. 1922. S.W. Szechuan.

22462. **Quercus aquifolioides,** Rehd. et Wils. var. **rufescens,** Rehd. et Wils. Tree of 40–70 ft. In fruit. In mixed forests on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Sept. 1922. S.W. Szechuan.

22463. **Quercus aquifolioides,** Rehd. et Wils. var. **rufescens,** Rehd. et Wils. vel aff. Shrub of 30 ft. In fruit. Forming thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. Sept. 1922. S.W. Szechuan.

22464. **Campanula chrysosplenifolia,** Franch. Plant of 3–10 inches. Flowers pale blue. Open stony meadows on the mountains east of Yungning. Lat. 27° 45′ N. Long. 100° 48′ E. Alt. 11,000 ft. Sept. 1922. S.W. Szechuan.

22466. **Quercus aquifolioides,** Rehd. et Wils. var. **rufescens,** Rehd. et Wils. Tree of 40–50 ft. Bole diameter 3–4½ ft. In forests on the mountains N.E. of Yungning. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Sept. 1922. S.W. Szechuan.

[Very fine!]

22467. **Cotoneaster.** Duplicate in immature fruit of F. No. . Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Sept. 1922. S.W. Szechuan.

22468. **Trigonotis microcarpa,** Benth. vel aff. Straggling plant of 1–1½ ft. Flowers blue. Open stony meadows on the margins of scrub on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Sept. 1922. S.W. Szechuan.

22469. **Saxifraga rufescens,** Balf. f. Plant of 14–18 inches. Flowers white. Banks in shady forests and thickets in side valleys on the mountains S.E. of Yungning. Lat. 27° 50′ N. Long. 101° E. Alt. 12,000 ft. Sept. 1922. S.W. Szechuan.

22470. **Lagotis yunnanensis,** W. W. Sm. Duplicate in fruit of F. No. . Chien-chuan-Mekong. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

22471. **Delphinium yunnanense,** Franch. vel aff. Plant of 1–2 ft. Flowers deep purplish-blue. Open alpine pasture on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22473. **Juniperus squamata,** Ham. var. **Fargesii,** Rehd. et Wils. Shrub of 3–5 ft. Open rocky alpine slopes on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 13–14,000 ft. Oct. 1922. N.W. Yunnan.

22474. **Cyananthus longiflorus,** Franch. Semi-prostrate plant of 2–4 inches. Flowers deep blue. Open alpine meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22475. **Celastrus** sp. aff. **gemmata,** Rehd. et Wils. Duplicate in full fruit of F. No. . Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. . Oct. 1922 N.W. Yunnan.

22476. **Pyrus.** Duplicate in full fruit of F. No.   . Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Oct. 1922. N.W. Yunnan.

22477. **Cyananthus Hookeri,** Clarke, var. **grandiflorus,** Marquand. Prostrate plant of 3–6 inches. Flowers deep blue. Forming mats on stony, dry meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11,000 ft. Oct. 1922. N.W. Yunnan.

22478. **Clematis yunnanensis,** Franch. Scandent shrub of 10–15 ft. Flowers on exterior pale ruddy brown. On scrub in thickets by streams on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11,000 ft. Oct. 1922. N.W. Yunnan.

22479. **Aster yunnanensis,** Franch. vel aff. Duplicate in fruit of F. No.   . Oct. 1922. N.W. Yunnan.

22480. **Cremanthodium reniforme,** Benth. Plant of 8–12 ins. Flowers golden-yellow. Open rocky meadow slopes and on ledges of cliffs and on screes on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22481. **Aster yunnanensis,** Franch. Duplicate in fruit of F. No.   . Oct. 1922. N.W. Yunnan.

22482. **Aster Delavayi,** Franch. Plant of 12–16 inches. Ray florets deep lavender-blue, disc florets dark orange-green. Open alpine meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 13–14,000 ft. Oct. 1922. N.W. Yunnan.

22483. **Delphinium yunnanense,** Franch. vel aff. Plant of 1–1½ ft. Flowers deep purple-blue. Dry stony meadows and on the margins of thickets on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

22484. **Aster.** Plant of 9–14 inches. Ray florets purple-blue, disc florets green-orange. Open alpine meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22485. **Cyananthus fasciculatus,** Marquand. Straggling plant of 2–3 ft. Flowers washy-blue, deepest at base. Amongst scrub and heavy herbage on the margins of alpine thickets on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12,000 ft. Oct. 1922. N.W. Yunnan.

22486. **Gentiana sino-ornata,** Balf. f. Tufted plant of 3–5 inches. Flowers bright blue, lined light and dark green on exterior. Open moist alpine meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 13–14,000 ft. Oct. 1922. N.W. Yunnan.

22487. **Senecio oreotrephes,** W. W. Sm. Plant of 2 ft. In fruit. Open situations on stony meadows on the margins of thickets on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11–12,000 ft. Oct. 1922. N.W. Yunnan.

22488. **Symplocos theifolia,** D. Don, vel v. aff. Shrub of 6–10 ft. Flowers immature. In open thickets in side valleys on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 8–9,000 ft. Oct. 1922. N.W. Yunnan.

22489. **Primula aemula,** Balf. f. et Forrest. Duplicate in fruit of F. No. . Sept. 1922. S.W. Szechuan.

22490. **Primula Littoniana,** G. Forrest, forma. Duplicate in fruit of F. No. . Sept. 1922. S.W. Szechuan.

22491. **Barleria cristata,** Linn. Plant of 6–18 inches. Flowers pale blue, lined and veined deeper. Dry stony meadows on the margins of scrub on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 9,000 ft. Sept. 1922. S.W. Szechuan.

22492. **Evolvulus alsinoides,** Linn. Straggling plant of 9–18 inches. Dry stony situations amongst herbage on the margins of thickets on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 9,000 ft. Sept. 1922. S.W. Szechuan.

22494. **Indigofera Delavayi,** Franch. Duplicate of F. No. in fruit. Sept. 1922. S.W. Szechuan.

22495. **Andrachne cordifolia,** Muell.-Arg. vel aff. Duplicate of F. No. in fruit. Sept. 1922. S.W. Szechuan.

22496. **Aster Harrowianus,** Diels. Duplicate of F. No. in fruit. Sept. 1922. S.W. Szechuan.

22497. **Euonymus grandiflorus,** Wall. var. Duplicate in fruit of F. No. . Sept. 1922. S.W. Szechuan.

22498. **Aster.** Plant of 10–16 inches. Ray florets pale lavender-blue, disc florets yellow. Open dry stony alpine meadows on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 12–13,000 ft. Sept. 1922. S.W. Szechuan.

22499. **Gmelina montana,** W. W. Sm. Duplicate in fruit of F. No. . Sept. 1922. S.W. Szechuan.

22500. **Primula pulchella,** Franch. Duplicate in fruit of F. No. . Sept. 1922. S.W. Szechuan.

22501. **Primula muliensis,** Hand.-Mzt. [*Primula Coryana*, Balf. f. et Forrest]. Duplicate in fruit of F. No. . Sept. 1922. S.W. Szechuan.

22502. **Primula muliensis,** Hand.-Mzt. [*Primula Coryana*, Balf. f. et Forrest]. Duplicate in fruit of F. No. . Sept. 1922. S.W. Szechuan.

22503. **Primula brevifolia,** G. Forrest. Duplicate of F. No. in fruit. Sept. 1922. S.W. Szechuan.

22504. **Bidens cernua,** Linn. Plant of 3 ft. Flowers dull deep orange. Margins of thickets by streams on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. Sept. 1922. S.W. Szechuan.

22505. **Meconopsis rudis,** Prain. Duplicate in fruit of F. No. . Sept. 1922. S.W. Szechuan.

22506. **Quercus** sp. aff. **Gilliana,** Rehd. et Wils. Duplicate of F. No. in fruit. Sept. 1922. S.W. Szechuan.

22510. **Perantha Forrestii,** Craib. Plant of 5–7 ins. Flowers deep orange. Dry rocks and slopes in side valleys on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 10–11,000 ft. Sept. 1922. S.W. Szechuan.

22512. **Abelia.** Shrub of 4–6 ft. In fruit. In scrub and mixed thickets on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11,000 ft. Oct. 1922. N.W. Yunnan.

22514. **Photinia Franchetiana,** Diels. Shrub of 20–35 ft. In fruit, fruits pale orange. Mixed thickets on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

22515. **Phyllanthus Roeperianus,** Wall. Dwarf shrub of 6–12 inches. In fruit, fruits black-purple. Open stony slopes and on meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11,000 ft. Oct. 1922. N.W. Yunnan.

22516. **Allium Beesianum,** W. W. Sm. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–14,000 ft. Oct. 1922. N.W. Yunnan.

22518. **Tanacetum adenanthum,** Diels. Tufted aromatic plant of 9–12 inches. Flowers orange. On stony alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. Oct. 1922. N.W. Yunnan.

22519. **Aster vestitus,** Franch. Plant of 10–14 inches. Ray florets magenta-rose, disc florets dark orange-green. Open stony alpine meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12,000 ft. Oct. 1922. N.W. Yunnan.

22520. **Betula japonica,** Sieb. var. Shrub of 20–40 ft. In fruit. Bark silvery-grey. Forming thickets on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12–13,000 ft. Oct. 1922 N.W. Yunnan.

22521. **Betula utilis,** D. Don, var. **sinensis,** Franch. Tree of 30–60 ft. Bark dull ruddy-brown, line white-grey. In mixed forests on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12–13,000 ft. Oct. 1922. N.W. Yunnan.

22522. **Prunus serrula,** Franch. Tree of 40–50 ft. In open mixed forests on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12,000 ft. Oct. 1922. N.W. Yunnan.

22523. **Ligustrum Delavayanum,** Hariot, vel aff. Shrub of 20 ft. In fruit, fruits purple-black. In open thickets on the eastern flank of the Lichiang range. Lat. 27° 15′ N. Long. 100° 11′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22524. **Sedum yunnanense,** Franch. var. **valerianoides,** R. Hamet. Succulent-leaved plant of 2–2½ ft. Flowers green. In alpine thickets on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

22525. **Betula utilis,** D. Don, var. **sinensis,** Franch. Tree of 30–60 ft. Foliage and bark only! In mixed forests on the eastern flank of the Lichiang range. Lat. 27° 40′ N. Long. 100° 11′ E. Alt. 11–12,000 ft. Oct. 1922. N.W. Yunnan.

22526. **Rosa.** Spinous shrub of 4–5 ft. Fruits bright orange. Open situations on the margins of forests on the eastern flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 11′ E. Alt. 11–12,000 ft. Oct. 1922. N.W. Yunnan.

22527. **Rosa.** Spinous shrub of 6–8 ft. Flowers rose. In fruit, fruits scarlet-crimson. Open thickets in side valleys on the eastern flank of the Lichiang range. Lat. 27° 15′ N. Long. 100° 11′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

22528. **Betula utilis,** D. Don, var. **sinensis,** Franch. Tree of 50–70 ft. In fruit (?). Bark ruddy-brown. In mixed forests on the N.W. flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 10′ E. Alt. 12,000 ft. Oct. 1922. N.W. Yunnan.

22529. **Arisaema** sp. aff. **Wilsonii,** Engler. Plant of 2–3 ft. In fruit, fruits scarlet-crimson. In shady mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 11,000 ft. Oct. 1922. N.W. Yunnan.

22530. **Pyrus.** Shrub of 20–25 ft. In fruit. Open mixed thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10,000 ft. Oct. 1922. N.W. Yunnan.

22531. **Lilium giganteum,** Wall. In mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22532. **Saussurea villosa,** Franch. vel aff. Plant of 2–2½ ins. Flowers rosy purple. Open stony alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 13,000 ft. Sept. 1922. N.W. Yunnan.

22533. **Trachydium simplicifolium,** W. W. Sm. Plant of 3–5 inches. Flowers grey, flushed rose. Open alpine meadows on the N.W. flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 10′ E. Alt. 12,000 ft. Sept. 1922. N.W. Yunnan.

[= F. No. 22195?]

22534. **Zizyphus montana,** W. W. Sm. Duplicate of F. No. in fruit. Oct. 1922. S.W. Szechuan.

22536. **Sedum primuloides,** Franch. Dry cliffs and rocks in side valleys on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 11–12,000 ft. Sept. 1922. S.W. Szechuan.

22537. **Leontopodium subulatum** (Franch.), Beauv. Tufted plant of 4–7 inches. Flowers grey-brown. Dry stony meadows and slopes on the E. flank of the Lichiang range. Lat. 27° 15′ N. Long. 100° 11′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

22538. **Aconitum Forrestii,** Stapf. Plant of 3–5 ft. Flowers deep purple-blue. Open alpine meadows and on the margins of forests on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 11′ E. Alt. 11–12,000 ft. Sept. 1922. N.W. Yunnan.

22539. **Tanacetum Delavayi,** Franch. Faintly aromatic plant of 6–12 inches. Flowers orange. Open stony meadows on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 11′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

22540. **Hibiscus.** Duplicate in fruit of F. No. . Sept. 1922. S.W. Szechuan.

22542. **Allium Beesianum,** W. W. Sm. N.-western flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 10′ E. Alt. 12–14,000 ft. Sept. 1922. N.W. Yunnan.

22544. **Decaisnea Fargesii,** Franch. Tree of 40 ft. In fruit. Open thickets on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Sept. 1922. N.W. Yunnan.

22545. **Castanea mollissima,** Blume. Tree of 30–60 ft. In fruit. Forming groves in the Yangtze valley. Lat. 27° N. Long. 100° E. Alt. 5–7,000 ft. Sept. 1922. N.W. Yunnan.

22546. **Botrychium ternatum,** Sw. Plant of 16–18 inches. In mixed forests and thickets on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Oct. 1922. N.W. Yunnan.

22547. **Abies,** sp. nov. Tree of 40–70 feet. In fruit. In conifer forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–14,000 ft. Sept. 1922. N.W. Yunnan.

22550. **Crataegus oresbia,** W. W. Sm. Shrub of 20 ft. In fruit, fruits crimson. In open thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11–12,000 ft. Sept. 1922. S.W. Szechuan.

22551. **Sedum.** Succulent leaved plant of 8–12 ins. Flowers pale yellow. On rocks and banks in shady forests on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 10–11,000 ft. Sept. 1922. S.W. Szechuan.

22552. **Betula utilis,** D. Don, var. **sinensis,** Franch. Tree of 40–50 ft. In fruit. In mixed forests and thickets on the mountains S.E. of Muli. Lat. 27° 50′ N. Long. 101° E. Alt. 12,000 ft. Sept. 1922. S.W. Szechuan.

22553. **Spiraea.** Shrub of 3–4 ft. In fruit. Open situations on the margins of thickets and on rocky slopes on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Sept. 1922. S. W. Szechuan.

22554. **Andrachne chinensis,** Bunge. Shrub of 4–7 ft. In fruit. In thickets on dry rocky slopes in side valleys on the mountains S.E. of Yungning. Lat. 27° 36′ N. Long. 100° 50′ E. Alt. 9,000 ft. Sept. 1922. S.W. Szechuan.

22555. **Scleria pergracilis,** Kunth. Duplicate in fruit of F. No.   . Powerfully lemon-scented. Oct. 1922. N.W. Yunnan.

22556. **Quercus variabilis,** Blume. Shrub or tree of 25–50 ft. In fruit. In mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 8–10,000 ft. Oct. 1922. N.W. Yunnan.

22557. **Quercus aliena,** Blume, var. **acuteserrata,** Maxim. Shrub or tree of 20–50 ft. In fruit. In oak and mixed forest on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 8–10,000 ft. Oct. 1922. N.W. Yunnan.

22558. **Pleurogyne oreocharis,** Diels. Tufted plant of 2–5 inches. Flowers deep indigo-blue, flushed faintly green on the exterior. On rocky slopes and alpine meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 14–15,000 ft. Oct. 1922. N.W. Yunnan.

22559. **Gentiana Trailliana,** Balf. f., et **G. Beesiana,** W. W. Sm. Plant of 4–8 inches. Flowers deep blue, flushed light and dark green exterior, throat white. Open alpine meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 15,000 ft. Oct. 1922. N.W. Yunnan.

22560. **Aconitum Forrestii,** Stapf. Plant of 2–3½ ft. Flowers deep purplish-blue, base lightest. Open situations on meadows on the margins of thickets on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 12–13,000 ft. Oct. 1922. N.W. Yunnan.

22564. **Clematis** sp. aff. **yunnanensis,** Franch. Duplicate in fruit of F. No. . Oct. 1922. N.W. Yunnan.

22566. **Codonopsis** sp. aff. **Tangshan,** Oliv. Duplicate in fruit of F. No. . Oct. 1922. N.W. Yunnan.

22568. **Cotoneaster.** Duplicate in fruit of F. No. . Oct. 1922. N.W. Yunnan.

22569. **Primula muscarioides,** Hemsl. var. Duplicate in fruit of F. No. . Oct. 1922. N.W. Yunnan.

22571. **Saxifraga brachyphylla,** Franch. Plant of 9–18 inches. Flowers bright light orange. Boggy meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

22572. **Celtis yunnanensis,** Schneid. Duplicate in fruit of F. No. . Oct. 1922. N.W. Yunnan.

22573. **Swertia.** Plant of 8–12 ins. Flowers very pale blue, greenish on exterior. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. Oct. 1922. N.W. Yunnan.

22574. **Thea.** Shrub of 4–6 ft. Flowers pink or rose (!). In thickets on rocky slopes in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. Oct. 1922. N.W. Yunnan.

22575. **Callitriche.** Aquatic plant of 2–2½ ft. In fruit, submerged. In a clear volcanic pool on the eastern flank of the Lichiang range. Lat. 27° 15′ N.. Long. 100° 11′ E. Alt. 10,000 ft. Oct. 1922. N.W. Yunnan.

22576. **Saxifraga petrophila,** Franch. var. **litschiangensis,** Engl. et Irmsch. Plant of 3–4 inches. Flowers golden-orange. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 13,000 ft. Oct. 1922. N.W. Yunnan.

22577. **Delphinium Beesianum,** W. W. Sm. Plant of 6–10 inches. Flowers deep purplish-blue, greyish on exterior. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22578. **Pleurogyne oreocharis,** Diels. Plant of 3–6 inches. Flowers deep purplish-blue, lined a deeper shade and tipped green on exterior at apex. On alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22579. **Primula anisodora,** Balf. f. et Forrest. Duplicate of F. No. in fruit. Oct. 1922. N.W. Yunnan.

22580. **Clematis trullifera,** Finet et Gagnep. Duplicate in fruit of F. No. . Oct. 1922. N.W. Yunnan.

22581. **Clematis montana,** Ham. Duplicate in fruit of F. No. . Oct. 1922. N.W. Yunnan.

22582. **Pyrus.** Shrub of 20–40 ft. In fruit. Open situations on the margins of pools on the hills on the east of the Lichiang valley. Lat. 27° 15′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

22583. **Cotoneaster.** Dwarf shrub of 8–12 inches. In fruit, fruits bright crimson. Open stony meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11,000 ft. Oct. 1922. N.W. Yunnan.

22584. **Viburnum foetidum,** Wall. forma. Shrub of 4–6 feet. In fruit, fruits red-scarlet. Open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

22585. **Thea.** Shrub of 3–5 ft. Flowers (?) immature. Open mixed and pine forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. Oct. 1922. N.W. Yunnan.

22586. **Eurya japonica,** Thunb. var. Shrub of 4–6 feet. Flowers pale creamy-yellow. In thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. Oct. 1922. N.W. Yunnan.

22588. **Pentapanax Leschenaultii,** Seem. Duplicate in fruit of F. No. . Oct. 1922. N.W. Yunnan.

22589. **Panax Ginseng,** C. A. Mey. Plant of 1½–2½ ft. In fruit, fruits scarlet with a black spot. In dense thickets and scrub in side valleys on the eastern flank of the Lichiang range. Lat. 27° 15′ N. Long. 100° 11′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

22591. **Acer tetramerum,** Pax. Shrub of 30–35 ft. In fruit. In thickets and mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11,000 ft. Oct. 1922. N.W. Yunnan.

22592. **Ligustrum.** Duplicate in fruit of F. No. . Fruits black-purple. Oct. 1922. N.W. Yunnan.

22593. **Chirita** sp. Duplicate in fruit of F. No. . Oct. 1922. N.W. Yunnan.

22595. **Buddleia myriantha,** Diels, vel aff. Shrub of 6–10 ft. Flowers dull rose-lavender, fragrant. In fruit. Open scrub and thickets on rocky slopes in side valleys on the eastern flank of the Lichiang range. Lat. 27° 15′ N. Long. 100° 11′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

22597. **Berberis** sp. aff. **replicata,** W. W. Sm. Duplicate in fruit of F. No. . Fruits deep crimson-purple. Oct. 1922. N.W. Yunnan.

22599. **Acer laxiflorum,** Pax. Duplicate in fruit of F. No. . Oct. 1922. N.W. Yunnan.

22600. **Euonymus Hamiltonianus,** Wall. vel aff. Shrub or tree of 25–50 ft. In fruit, fruits dull red-crimson. In open forest on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 11′ E. Alt. 12–13,000 ft. Oct. 1922. N.W. Yunnan.

[The largest-leaved Euonymus I know!]

22601. **Aconitum** sp. aff. **venatorium,** Diels. Plant of 2–2½ ft. Flowers dull deep bluish-purple. On ledges of cliffs and open rocky slopes amongst scrub on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 13,000 ft. Oct. 1922. N.W. Yunnan.

22602. **Gentiana sino-ornata,** Balf. f. Tufted plant of 2–3 ins. Flowers bright blue interior, exterior lined deeper blue and greenish-grey. Open moist alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. Oct. 1922. N.W. Yunnan.

22603. **Delphinium Forrestii,** Diels. Duplicate in fruit of F. No. . Oct. 1922. N.W. Yunnan.

22607. **Clematis grata,** Wall. Duplicate in fruit of F. No. . Oct. 1922. N.W. Yunnan.

22608. **Cotoneaster.** Duplicate in fruit of F. No. . Fruits light scarlet. Oct. 1922. N.W. Yunnan.

22609. **Gentiana picta,** Franch. Plant of 6–9 ins. Flowers deep blue, shaded to greenish-yellow base, speckled blue. Open marshy meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Oct. 1922. N.W. Yunnan.

22622. **Pyrus.** Shrub of 20–35 ft. In fruit. Fruits crimson and white. In open thickets and forests on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 11,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22623. **Berberis** sp. aff. **Tischleri,** Schneid. Spinous shrub of 4–6 ft. In fruit, fruits scarlet-crimson. Open bouldery slopes and meadows on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 12,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22624. **Viburnum flavescens,** W. W. Sm. var. Shrub of 6–8 ft. In fruit, fruits crimson. Thickets in side valleys on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 11,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22625. **Calanthe densiflora,** Lindl. vel v. aff. Plant of 1–1½ ft. Flowers yellow and purple. Margins of thickets in shady side valleys on the Salwin-Kiu Chiang divide, west of Si-K'ai. Lat. 27° 48′ N. Long. 98° 33′ E. Alt. 10,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22626. **Quercus** sp. aff. **glauca,** Thunb. Shrub of 20–40 ft. In fruit. Mixed forests on the Salwin-Kiu Chiang divide, west of Si-K'ai. Lat. 27° 48′ N. Long. 98° 33′ E. Alt. 8–9,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22627. **Viburnum atrocyaneum,** Clarke. Shrub of 6–10 feet. In fruit, fruits blue-purple. In thickets by streams on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 7,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22631. **Acer cappadocicum,** Gleditsch, fa. **tricaudatum,** Rehd. Duplicate aff. F. Nos. 21599 and 21672. Tree of 20–40 feet. In fruit. Oct. 1922. Tsarong, S.E. Tibet.

22633. **Meconopsis pseudointegrifolia,** Prain. Plant of 16–20 inches. In fruit. Mountains east of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 14–15,000 ft. Oct. 1922. N.W. Yunnan.

22634. **Meconopsis** sp. aff. **rudis,** Prain. Plant of 12–18 ins. In fruit. Mountains east of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22635. **Saxifraga nutans,** Hook. f. et Thoms. Plant of 6–10 inches. In fruit. E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 13,000 ft. Oct. 1922. N.W. Yunnan.

22636. **Senecio.** Plant of 6–16 ins. In fruit. E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 14,500 ft. Oct. 1922. N.W. Yunnan.

22637. **Cremanthodium Helianthus** (Franch.), vel v. aff. Plant of 20–24 inches. In fruit. E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 14,500 ft. N.W. Yunnan.

22638. **Primula** sp. (A Nivalid). Plant of 4–8 inches. In fruit. E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 13,000 ft. Oct. 1922. N.W. Yunnan.

22639. **Crepis** sp.? Plant of 2–3 inches. In fruit. E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22640. **Saussurea.** Plant of 1 inch. In fruit. E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 15,000 ft. Oct. 1922. N.W. Yunnan.

22641. **Crepis** sp.? Plant of 2–3 inches. In fruit. E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 14,500 ft. Oct. 1922. N.W. Yunnan.

22642. **Meconopsis** sp. aff. **rudis,** Prain. Plant of 12–14 ins. In fruit. E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22643. **Saussurea.** Plant of 3–7 inches. In fruit. E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 15,000 ft. Oct. 1922. N.W. Yunnan.

22644. **Saussurea wernerioides,** Sch.-Bip. Tufted plant of 1–1½ inches. In fruit. E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 15,000 ft. Oct. 1922. N.W. Yunnan.

22645. **Primula sinoplantaginea,** Balf. f. Plant of 14–16 ins. In fruit. E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 13–14,000 ft. Oct. 1922. N.W. Yunnan.

22646. **Saussurea velutina,** W. W. Sm. Plant of 8–10 inches. In fruit. E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 14,500 ft. Oct. 1922. N.W. Yunnan.

22740. **Pyrus.** Duplicate in fruit of F. No. 21800. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22741. **Acer Campbellii,** Hook. f. et Thoms. var. **yunnanensis,** Rehd. Duplicate in fruit of F. No. 21797. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22742. **Acer Wardii,** W. W. Sm. Duplicate of F. No. 21645 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22743. **Acer tetramerum,** Pax, var. Duplicate of F. No. 21630 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22744. **Acer Forrestii,** Diels, forma. Duplicate of F. No. 21671 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22745. **Acer Campbellii,** Hook. f. et Thoms. var. **yunnanensis,** Rehd. Duplicate of F. No. 21622 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22746. **Euonymus** sp. aff. **theifolius,** Wall. Duplicate of F. No. 21621 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22747. **Enkianthus.** Duplicate of F. No. 21656 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22748. **Betula utilis,** D. Don, var. Shrub of 20–30 ft. In fruit. Bark grey. Open forests on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 13-14,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22752. **Quercus** sp. aff. **glauca,** Thunb. Duplicate of F. No. in fruit. Same locality and situation. Oct. 1922. N.W. Yunnan.

22753. **Acer cappadocicum,** Gleditsch, var. **sinicum,** Rehd. Duplicate of F. No. 21672 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22754. **Euonymus** sp. aff. **porphyreus,** Loesen. Duplicate of F. No. in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22755. **Primula limbata,** Balf. f. et Forrest. Duplicate of F. No. in fruit. Same locality and situation Oct. 1922. Tsarong, S.E. Tibet.

22757. **Syringa Potaninii,** Schneid. Duplicate of 1917. F. No. in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22760. **Berberis Jamesiana,** Forrest et W.W. Sm. Duplicate of F. No. 21609 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22763. **Vaccinium Delavayi,** Franch. Duplicate of F. No. 21805 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22764. **Corylopsis yunnanensis,** Diels. Duplicate of F. No. 21623 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22765. **Acer cappadocicum,** Gleditsch, var. **sinicum,** Rehd. Duplicate of F. No. 21599 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22766. **Picrasma quassioides,** Benn. Shrub of 10–20 ft. In fruit. In thickets by streams on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 10–11,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22773. **Caryopteris trichosphaera,** W. W. Sm. Aromatic shrub of 2–3 ft. Flowers blue. Open dry hillsides on the mountains east of Atuntze. Lat. 28° 36′ E. Long. 99° E. Alt. 12,000 ft. Oct. 1922. N.W. Yunnan.

22775. **Aster.** Plant of 12–16 inches. In fruit. Open alpine meadows on the mountains east of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 13,000 ft. Oct. 1922. N.W. Yunnan.

22776. **Primula vittata,** Franch. In fruit. By streams in thickets on the mountains east of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 13,000 ft. Oct. 1922. N.W. Yunnan.

22777. **Saussurea quercifolia,** W. W. Sm. Plant of 1–2 ins. In fruit. Alpine moorland on the mountains east of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22778. **Caragana crassicaulis,** Benth. Matted shrub of 1 ft. In fruit. Alpine moorland on the mountains east of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 14–15,000 ft. Oct. 1922. N.W. Yunnan.

22779. **Androsace Delavayi,** Franch. Mat cushion plant of several inches diameter. In fruit. Open moist alpine moorland on the mountains east of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 15,000 ft. Oct. 1922. N.W. Yunnan.

22780. **Diapensia** sp. (Without flowers). Cushion plant of several inches diameter. Open moist alpine moorland on the mountains east of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 15,000 ft. Oct. 1922. N.W. Yunnan.

22781. **Primula sikkimensis,** Hook. Plant of 1–1½ ft. In fruit. Open moist meadows on the mountains east of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22782. **Gentiana** sp. aff. **phyllocalyx,** Clarke. Plant of 1–1½ inches. In fruit. Open moist alpine moorland on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 15,000 ft. Oct. 1922. N.W. Yunnan.

22783. **Primula vittata,** Franch. In fruit. Open moist meadows on the margins of thickets on the mountains east of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 12,000 ft. Oct. 1922.

22789. **Quercus variabilis,** Blume. Tree of 30–50 feet. In fruit. Open mixed forests on the Mekong-Salwin divide. Lat. 28° N. Long. 98° 42′ E. Alt. 10,000 ft. Oct. 1922. N.W. Yunnan.

22790. **Gentiana tsarongensis,** Balf. f. et Forrest MSS. Plant of 2 inches. Flowers deep blue. Open moist alpine meadows on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 15,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22791. **Gentiana cyananthiflora,** Franch. Plant of 1–1¼ ins. In fruit. Open moist alpine moorland on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 15,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22792. **Cyananthus lobatus,** Wall. Plant of 2–4 inches. Flowers deep purple-blue. Open stony moorland on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 13,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22793. **Lactuca gombalana,** Hand.-Mzt. Duplicate in fruit of F. No. of 1921. Oct. 1922. Tsarong, S.E. Tibet.

22794. **Gentiana.** Plant of 4–6 inches. Flowers greenish-yellow, marked and lined deep blue-purple exterior. Open alpine meadows on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 14,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22795. **Saxifraga finitima,** W. W. Sm. vel aff. Cushion plant of 4–6 inches diameter, 1–2 inches high. Flowers yellow. Open stony meadows and on cliffs and screes on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 15,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22796. **Tinospora** sp.? Duplicate in foliage of F. No. 21669. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22797. **Gentiana Arethusae,** Burkill. Plant of 3–4 inches. Flowers bright clear blue, deep blue and green on exterior. Open moist moorland on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 15,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22798. **Lactuca amoena,** Hand.-Mzt. Duplicate in fruit of F. No. 1921. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22811. **Ilex intricata,** Hook. f. vel v. aff. Shrub of 1–1½ ft. In fruit, fruits scarlet On rocky slopes and moorland on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 13,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22812. **Omphalogramma elegans,** G. Forrest. Duplicate of F. No. 21793 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22813. **Primula Agleniana,** Balf f. et Forrest. Duplicate of F. No. 21637 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22814. **Primula Dickieana,** Watt, var. **Pantlingii** (King). Duplicate of F. No. 21633 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22818. **Primula calliantha,** Franch. Duplicate of F. No. 21788 in fruit.. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22819. **Primula calliantha,** Franch. forma. Duplicate of F. No. 21643 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22820. **Cremanthodium Decaisnei,** Clarke, vel aff. Plant of 18–20 inches. Flowers said to be crimson (?). Open alpine meadows on the Yang-dzo Shan, Mekong-Salwin divide. Lat. 28° 20′ N. Long. 98° 42′ E. Alt. 12,000 ft. Oct. 1922. N.W. Yunnan.

22821. **Pyrus.** Duplicate of F. No. 21799 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22823. **Aster scaber,** Thunb. vel aff. Plant of 10–16 inches. Ray florets magenta-crimson, disc florets dull green-yellow. Open alpine meadows on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 14,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22824. **Prunus crataegifolius,** Hand.-Mzt. Duplicate of 1921 in fruit. Same locality and situation. Oct 1922. Tsarong, S.E. Tibet.

22825. **Viburnum brachybotryum,** Hemsl. Shrub of 6–8 ft. In fruit, fruits crimson. Open thickets by streams on the Salwin-Mekong divide. Lat. 27° 25′ N. Long. 98° E. Alt. 12,000 ft. Oct. 1922. N.W. Yunnan.

22826. **Dipentodon sinicus,** Dunn. Duplicate of F. No. 21662 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22827. **Prunus.** Shrub of 10–15 ft. In fruit. Open thickets on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 12,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22828. **Cremanthodium Decaisnei,** Clarke, vel aff. Plant of 1–2 ft. Flowers yellow (?). In fruit. Open alpine meadows on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 13,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22829. **Cremanthodium Farreri,** W. W. Sm. vel v. aff. Plant of 2–2½ ft. Flowers fragrant. Ray florets dull crimson, disc florets dull green-orange. Open alpine meadows on the Salwin-Mekong divide. Lat. 27° 25′ N. Long. 98° 53′ E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22830. **Primula Agleniana,** Balf. f. et Forrest. Plant of 14–16 inches. In fruit. Open alpine meadows on the Salwin-Mekong divide. Lat. 27° 25′ N. Long. 98° 53′ E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22832. **Coriaria terminalis,** Hemsl. Shrub of 3–4 feet. In fruit, fruits dull crimson. Open rocky slopes amongst scrub on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 9–10,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22835. **Pyrus.** Duplicate of F. No. 21801 in fruit, fruits pinkish-white. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22836. **Maddenia hypoxantha,** Koehne. Duplicate of F. No. 21598. Foliage only. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22837. **Spiraea hypericifolia,** Linn. forma. Duplicate of F. No. 21618 (?). Foliage only. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22838. **Elaeocarpus Braceanus,** Watt, vel aff. Duplicate of F. No. . Foliage only. Same locality and situation. Shrub or tree of 20–30 ft. Fruits blue-black. Oct. 1922. Tsarong, S.E. Tibet.

22839. **Agapetes** sp. aff. **Bulleyana,** Diels. Duplicate of F. No. 21596. Foliage only. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22840. **Primula Agleniana,** Balf. f. et Forrest. Duplicate of F. No. in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22841. **Magnolia rostrata,** W. W. Sm. Duplicate of F. No. 21615 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22842. **Rosa.** Duplicate of F. No. 21631 in fruit, fruits dull orange. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22843. **Pyrus.** Duplicate of F. No. 21665 in fruit, fruits white. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22844. **Gaultheria suborbicularis,** W. W. Sm. Duplicate of 1921 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22845. **Ilex micrococca,** Maxim. Duplicate of F. No. 21663 in fruit, fruits scarlet-crimson. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22848. **Enkianthus.** Duplicate of F. No. 21654 in fruit. Same locality and situation. Oct. 1922. Tsarong S.E. Tibet.

22849. **Primula Agleniana,** Balf. f. et Forrest. Duplicate of F. No.   in fruit. Same locality and situation. Oct. 1922.

22864. **Omphalogramma minus,** Hand.-Mzt. vel aff. Duplicate of F. No. 21795 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22865. **Patrinia** sp. aff. **heterophylla,** Bunge. Duplicate of 1921. Flowers yellow - orange. In fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22866. **Betula utilis,** D. Don, var. Shrub of 20–30 feet. In fruit. In mixed thickets on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 13,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22867. **Ribes laurifolium,** Jancz. ♀ Duplicate of F. No. 21661 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22868. **Ilex Franchetiana,** Loesen, vel aff. Shrub of 20–35 ft. In fruit, fruits black-blue. In mixed thickets in side valleys on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E′. Alt. 10–11,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22869. **Magnolia nitida,** W. W. Sm. Duplicate in fruit of F. No. 21616. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22870. **Pyrus.** Duplicate of F. No. 21806 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22871. **Alangium begoniifolium** (Roxb.), Baill. Shrub of 10–20 ft. Flowers yellow. In fruit. Open thickets by streams on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 10–11,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22872. **Idesia polycarpa,** Maxim. Duplicate of 1921 in fruit. F. No. . Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22873. **Ilex** sp. aff. **corallina,** Franch. Duplicate of F. No. 21808 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22874. **Prunus mugus,** Hand.-Mzt. Duplicate of F. No. 21804 in fruit. Same locality and situation. Oct 1922. Tsarong, S.E. Tibet.

22875. **Prunus mugus,** Hand.-Mzt. Duplicate of F. No. 21634 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22876. **Prunus.** Duplicate of F. No. in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22877. **Viburnum erubescens,** Wall. Duplicate of F. No. 21638 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22878. **Lindera** sp. aff. **cercidifolia,** Hemsl. Duplicate of F. No. 21594 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22879. **Prunus.** Duplicate of F. No. 21666 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22880. **Lindera** sp.? Duplicate of F. No. 21629 in foliage only. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22881. **Morus notabilis,** Schneid. Duplicate in fruit of F. No. . Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22882. **Styrax.** Duplicate in fruit of F. No. 21648. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22919. **Fraxinus inopinata,** Lingelsh. vel. v. aff. Tree of 40–60 ft. In fruit. In mixed forests on the Salwin-Mekong divide, east of Chamatong. Lat. 28° 18′ N. Long. 98° 45′ E. Alt. 10–11,000 ft. Oct. 1922 Yunnan.

22920. **Viburnum cordifolium,** Wall. var. Duplicate of F. No. 21628 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22921. **Enkianthus.** Duplicate of F. No. 21658 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22926. **Magnolia tsarongensis,** W. W. Sm. et Forrest. Duplicate of F. No. 21722 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22927. **Styrax shweliensis,** W. W. Sm. Duplicate of F. No. 21803 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22928. **Aster.** Plant of 4–8 inches. Ray florets deep crimson, disc florets deep orange-green. Open stony alpine meadows on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 14,500 ft. Oct. 1922. Tsarong, S.E. Tibet.

22929. **Primula flexilipes,** Balf. f. et Forrest. Duplicate of F. No. 21791 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22930. **Gentiana.** Plant of 2½–5 inches. Flowers pale yellow, mottled and banded blue on exterior. Open moist alpine meadows on the Salwin-Kiu Chiang divide, W. of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 13–14,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22931. **Primula Valentiniana,** Hand.-Mzt. Duplicate of F. No. 21792 in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22932. **Primula silaensis,** Petitm. Plant of 2–5 ins. In fruit. Alpine meadows west of Chamatong, Salwin-Kiu Chiang divide. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 14,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22933. **Rhamnus.** Tree of 40–50 feet. In fruit. In mixed thickets and forests on the Salwin-Kiu Chiang divide, west of Chamatong. Lat. 28° 18′ N. Long. 98° 27′ E. Alt. 11,000 ft. Oct. 1922. Tsarong S.E. Tibet.

22936. **Lactuca amoena,** Hand.-Mzt. Plant of 2–3 inches. In fruit. Open alpine moorland on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 14,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

22937. **Vaccinium oreotrephes,** W. W. Sm. Duplicate in fruit of F. No. 21646. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22944. **Enkianthus.** Duplicate of F. No. 21647 (?) in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22945. **Euonymus** sp. aff. **amygdalifolius,** Franch. Duplicate of F. No. in fruit. Same locality and situation. Oct. 1922. Tsarong, S.E. Tibet.

22947. **Androsace spinulifera,** Knuth. Duplicate of F. No. in fruit. Same locality and situation. Oct. 1922. S.W. Szechuan.

22948. **Quercus** sp. aff. **dilatata,** Lindl. Shrub or tree of 20–45 ft. Leaves slightly spinous. Open mixed thickets and forests on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9,000 ft. Oct. 1922. S.W. Szechuan.

22949. **Saussurea** sp. aff. **subulata,** Clarke. Tufted plant of 4–7 inches. Dry stony alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14,000 ft. Oct. 1922. S.W. Szechuan.

22950. **Cotoneaster.** Shrub of 6–9 ft. In fruit, fruits dull scarlet. Open thickets in dry situations on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. Oct. 1922. S.W. Szechuan.

22951. **Cotoneaster.** Shrub of 2–4 ft. In fruit, fruits scarlet. Open rocky slopes and meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Oct. 1922. S.W. Szechuan.

22952. **Cotoneaster.** Shrub of 4–6 ft. Much branched. In fruit, fruits bright scarlet. Open rocky slopes and amongst scrub by streams on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Oct. 1922. S.W. Szechuan.

22954. **Acer Davidi,** Franch. Duplicate in fruit of F. No. . Same locality and situation. Oct. 1922. S.W. Szechuan.

22955. **Cotoneaster.** Shrub of 2–4 ft. In fruit, fruits crimson. Amongst scrub on rocky hillsides and on cliffs on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Oct. 1922. S.W. Szechuan.

22956. **Acrocephalus fruticosus,** Dunn. Strongly aromatic shrub of 6–12 inches. Flowers dull pale yellow. Open, dry, stony hillsides and on ledges of cliffs in side valleys on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 9,000 ft. Oct. 1922. S.W. Szechuan.

22957. **Lespedeza atrokermesina,** G. Forrest. Shrub of 4–6 ft. Flowers black crimson-purple. Open dry hillsides amongst scrub and rock on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 8–9,000 ft. Oct. 1922. S.W. Szechuan.

22958. **Chelonopsis siccanea,** W. W. Sm. Shrub of 4–6 feet. Foliage faintly aromatic. Flowers dull purplish-crimson shaded to yellowish at base. Rocky situations amongst scrub by streams on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 8,000 ft. Oct. 1922. S.W. Szechuan.

22959. **Ilex Delavayi,** Franch. Duplicate of F. No. 21235 in fruit. Same locality and situation. Oct. 1922. S.W. Szechuan.

22960. **Eriobotrya japonica,** Lindl. vel aff. Duplicate of F. No. . Same locality and situation. Oct. 1922. N.W. Yunnan.

22961. **Cinnamomum Wilsonii,** Gamble, vel aff. Duplicate of F. No. 21423. N.W. flank of the Lichiang range. Oct. 1922. N.W. Yunnan.

22962. **Saxifraga finitima,** W. W. Sm. Cushion plant of several inches diameter. In fruit. Alpine moorland and ledges of cliffs on the mountains N.E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22963. **Sedum.** Plant of 6–10 inches. In fruit. Mountains N.E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22964. **Primula philoresia,** Balf. f. et Ward. Mountains N.E. of Atuntze. Lat. 28° 36′ N. Long. 99° E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22966. **Delphinium** sp. aff. **Forrestii,** Diels. Plant of 14–24 inches. Flowers dull purplish-blue. Rocky slopes and meadows. Mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14,000 ft. Oct. 1922. S.W. Szechuan.

22967. **Delphinium Beesianum,** W. W. Sm. Plant of 6–10 inches. Flowers deep purple-blue. Open alpine meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14–15,000 ft. Oct. 1922. S.W. Szechuan.

22970. **Cotoneaster.** Duplicate of F. No. in fruit. Oct. 1922. S.W. Szechuan.

22973. **Saussurea.** Plant of 1 inch. Moist meadows and in marshes on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 14,000 ft. Oct. 1922. N.W. Yunnan.

22974. **Acer Franchetii,** Pax. Shrub of 20–40 feet. Open thickets on the N.W. flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 10′ E. Alt. 12,000 ft. In fruit. Oct. 1922. N.W. Yunnan.

22975. **Ipomoea hederacea,** Jacq. Duplicate in fruit of F. No. . Oct. 1922. S.W. Szechuan.

22976. **Spiraea sinobrahuica,** W. W. Sm. Duplicate in fruit of No. . Oct. 1922. S.W. Szechuan.

22977. **Hymenophyllum polyanthes,** Sw. Matted plant of 2 inches. Forming cushions on dry shady banks and cliffs in side valleys. Mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10,000 ft. Oct. 1922. S.W. Szechuan.

22980. **Castanopsis** sp.? Tree of 30–60 ft. In forests on the N.W. flank of the Lichiang range. Foliage only. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11,000 ft. Oct. 1922. N.W. Yunnan.

22981. **Rosa.** Duplicate in fruit of F. No. . Oct. 1922. N.W. Yunnan.

22982. **Tanacetum** sp. aff. **glabriusculum,** W. W. Sm. Aromatic plant of 1½–2 ft. Flowers orange-yellow. Rocks on the N.W. flank of the Lichiang range. Lat. 27° 30′ N. Long. 100° 10′ E. Alt. 13,000 ft. Oct. 1922. N.W. Yunnan.

22983. **Pyrus.** Duplicate in fruit of F. No. , fruits light crimson. Oct. 1922. Tsarong, S.E. Tibet.

22984. **Gentiana Georgii,** Diels. Open alpine moorland. Oct. 1922. Tsarong, S.E. Tibet.

22986. **Pyrus.** Duplicate in fruit of F. No. . Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

22987. **Schefflera dumicola,** W. W. Sm. Duplicate in fruit of F. No. . Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

22988. **Rosa.** Duplicate in fruit of F. No. . Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

22989. **Rhamnus.** Duplicate of F. No. in fruit. Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

22990. **Trachydium simplicifolium,** W. W. Sm. Duplicate of F. No. in full flower. Flowers greenish-white. Oct. 1922. N.W. Yunnan.

22991. **Juniperus squamata,** Ham. var. **Fargesii,** Rehd. et Wils. Shrub of 10–20 ft. In fruit. Mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14,000 ft. Oct. 1922. S.W. Szechuan.

22992. **Gentiana.** Plant of 4–6 inches. Flowers deep rich blue, greenish exterior. Open moist stony meadows on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 14,000 ft. Oct. 1922. S.W. Szechuan.

22993. **Pyrus.** Duplicate of F. No.   in fruit. Oct. 1922. N.W. Yunnan.

22995. **Pyrus.** Duplicate of F. No. 22993. Chien-chuan-Mekong. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. Oct. 1922. N.W. Yunnan.

22996. **Abies Faxoniana,** Rehd. et Wils., forma. Tree of 40–60 ft. In fruit. Conifer forests on the Chien-chuan-Mekong. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–14,000 ft. Oct. 1922. N.W. Yunnan.

[Seed procured.]

23008. **Corylus heterophylla,** Fisch. var. **sutchuenensis,** Franch. Shrub of 20–30 ft. In fruit. By streams in thickets on the mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 10–11,000 ft. Oct. 1922. S.W. Szechuan.

23009. **Pyrus.** Shrub of 20 feet. In fruit. In thickets. Mountains S.E. of Mu-li. Lat. 27° 50′ N. Long. 101° E. Alt. 11,000 ft. Oct. 1922. S.W. Szechuan.

23011. **Vaccinium Donianum,** Wight, vel aff. Duplicate of F. No.   in fruit. Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 12,000 ft. Oct. 1922. N.W. Yunnan.

23015. **Sedum.** Plant of 4–6 inches. Flowers brassy yellow. On rocks in dry situations in the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 12,000 ft. Oct. 1922. N.W. Yunnan.

23017. **Arisaema.** Plant of 10–12 inches. In fruit. Open stony meadows on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 12,000 ft. Oct. 1922. N.W. Yunnan.

23018. **Pyrus.** Shrub of 20–30 ft. In fruit, fruits white, flushed rose one side. In thickets on the Salwin-Kiu Chiang divide, N.W. of Si-chi-to. Lat. 28° 48′ N. Long. 98° 15′ E. Alt. 11–12,000 ft. Oct. 1922. Tsarong, S.E. Tibet.

23019. **Pyrus.** Shrub of 18–25 ft. In fruit, fruits pale yellow. Open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. Oct. 1922. N.W. Yunnan.

23022. **Phalaenopsis Wilsoni,** Rolfe. Epiphytic plant of 4–6 inches. Flowers pale magenta-rose, labellum rose-lake. On trees by streams and on rocks on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9,000 ft. Oct. 1922. N.W. Yunnan.

23023. **Schefflera dumicola,** W. W. Sm. Duplicate of F. No. 22987 in full fruit, fruits black. Same locality and situation. Oct. 1922. N.W. Yunnan.

23026. **Schima argentea,** Pritzel. Shrub of 12–25 ft. Flowers creamy-white. In thickets by streams and on hill-sides on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. Aug. 1922. N.W. Yunnan.

23027. **Vaccinium Donianum,** Wight, vel aff. Shrub of 6–9 ft. In fruit, flowers dull waxy-white. In thickets on bouldery slopes on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

23028. **Rhus punjabensis,** Stewart, var. **sinica,** Rehd. et Wils. Shrub of 6–12 ft. In fruit, fruits dull orange-red. Open scrub by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 7,000 ft. Sept. 1922. N.W. Yunnan.

23029. **Potentilla fruticosa,** Linn. forma. Shrub of 2–4 feet. Flowers deep orange. Dry bouldery meadows and slopes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

23030. **Arisaema.** Plant of 9–12 inches. In fruit, fruits scarlet. Open stony meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11,000 ft. Aug. 1922. N.W. Yunnan.

23031. **Vaccinium Donianum,** Wight, vel aff. Shrub of 3–5 ft. In fruit. On scrub-clad cliffs on the hills S.W. of Lichiang-fu. Lat. 26° 50′ N. Long. 100° 10′ E. Alt. 9–10,000 ft. Sept. 1922. N.W. Yunnan.

23032. **Pentapanax Henryi,** Harms. Shrub of 10–20 ft. In fruit. In thickets by streams on the western slopes of the Sung-kwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

23033. **Elsholtzia ianthina,** Dunn, vel aff. Plant of 2–4 feet. In fruit. By streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

23034. **Indigofera.** Shrub of 6–9 ft. In fruit. By streams and on bouldery slopes in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

23035. **Oreocharis Delavayi,** Franch. vel aff. Plant of 2–3 inches. Flowers deep orange. Moist shady rocks and on trees in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

23036. **Euptelea pleiosperma,** Hook. f. et Thoms. Shrub of 6–15 ft. In fruit. Open thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

23037. **Meliosma cuneifolia,** Franch. Shrub of 10–12 feet. Flowers creamy-yellow. In shady thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

23038. **Anemone rupicola,** Cambess. Plant of 4–6 inches. Flowers white, faintly tinged purplish-blue on exterior. Stony slopes on the margins of thickets on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. July 1922. N.W. Yunnan.

23039. **Stereosanthes yunnanensis,** Franch. Plant of 9–14 ins. Flowers orange-yellow. Open alpine meadows in and on the margins of conifer forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. July 1922. N.W. Yunnan.

23040. **Podophyllum Emodi,** Wall. Plant of 1½–2 feet. In fruit. Open alpine meadows and amongst dwarf scrub on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. Aug. 1922. N.W. Yunnan.

23041. **Omphalogramma vinciflora,** Franch. Plant of 12–16 inches. Flowers deep purplish-blue. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. July 1922. N.W. Yunnan.

23042. **Primula sonchifolia,** Franch. Plant of 3–5 inches. Flowers purplish-blue, eye yellow. Open, moist, stony meadows and amongst dwarf alpine scrub on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 14,000 ft. July 1922. N.W. Yunnan.

23043. **Ribes glaciale,** Wall. Dwarf shrub of 2–3 ft. In immature fruit. Amongst alpine scrub on rocky slopes and meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 13–14,000 ft., Aug. 1922. N.W. Yunnan.

23044. **Calanthe undulata,** Schltr. Plant of 14–16 inches. Flowers dull orange-olive, labellum dull muddy crimson. Boggy pasture by streams and amongst dwarf scrub on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

23045. **Potentilla albifolia,** Wall. Plant of 4–7 ins. Flowers deep olive-orange. Open limy alpine pasture on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. July 1922. N.W. Yunnan.

23046. **Paraquilegia microphylla,** Drumm. et Hutch. Tufted plant of 4–7 inches. Flowers semi-pendulous, washed pale lavender, almost white, nectaries orange-yellow. Forming cushions of 9–18 inches diameter on limestone cliffs on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. July 1922. N.W. Yunnan.

23047. **Viburnum cylindricum,** Ham. Shrub of 6-10 feet. Flowers dull creamy-white, anthers purple. Open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

23048. **Androsace dissecta,** Franch. Plant of 4-8 inches. Flowers white. Shady banks amongst scrub in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

23049. **Tovaria lichiangensis,** W. W. Sm. Plant of 3–7 ins. Flowers white, strongly fragrant. Amongst scrub and in shady conifer forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. July 1922. N.W. Yunnan.

23050. **Cypripedium margaritaceum,** Franch. Plant of 2–3 inches. Sepals and petals, dull dark muddy maroon-crimson, labellum dull greenish-olive, profusely blotched dull maroon-crimson. Shady, dry, stony banks by streams and in conifer forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11,000 ft. July 1922. N.W. Yunnan.

23051. **Cornus macrophylla,** Wall. Shrub of 10–16 feet. Flowers creamy-yellow. Open thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9,000 ft. July 1922. N.W. Yunnan.

23052. **Lilium yunnanense,** Franch. Plant of 10–18 inches. Flowers dull white, interior spotted purple at base, in bud flushed purplish exterior. Dry situations amongst alpine scrub on the western slopes of the Sungkwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 11,000 ft. July 1922. N.W. Yunnan.

23053. **Hemsleya amabilis,** Diels. Scandent plant of 4–8 ft. Flowers olive-green. On scrub on the margins of thickets on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9,000 ft. July 1922. N.W. Yunnan.

23054. **Dioscorea kumaonensis,** Kunth, var. **argentiflora,** Prain et Burkill. Scandent plant of 5–9 ft. Flowers greenish-white. On scrub and grass on the margins of thickets on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. July 1922. N.W. Yunnan.

23055. **Buddleia macrostachya,** Benth. var. **megalantha,** W.W. Sm. Shrub of 10–20 ft. Flowers deep purple-lavender, tube darkest, fragrant. In thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. July 1922. N.W. Yunnan.

23056. **Primula blattariformis,** Franch. Plant of 9–15 inches. Flowers fragrant, rose with yellow eye. On dry stony pasture and ledges of limestone cliffs on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. July 1922. N.W. Yunnan.

23057. **Styrax langkongensis,** W. W. Sm. Shrub of 2–4 ft. Flowers soft creamy-white, occasionally very faintly tinged pink. Dry stony meadows on the margins of pine forest on the western slopes of the Sungkwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 9,000 ft. June 1922. N.W. Yunnan.

23058. **Solms-Laubachia pulcherrima,** Muschler. In fruit. Limestone cliffs on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 14–15,000 ft. July 1922. N.W. Yunnan.

23059. **Itea yunnanensis,** Franch. Shrub of 6–10 ft. In fruit. In thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

23060. **Mussaenda divaricata,** Hutch. Shrub of 5–9 feet. Bracts creamy-white, flowers deep orange. Dry rocky slopes and amongst scrub by streams in the Yangtze valley. Lat. 26° 50′ N. Long. 100° 25′ E. Alt. 5–6,000 ft. July 1922. N.W. Yunnan.

23061. **Primula polyphylla** (Franch.), Petitm. var. **monticola,** Hand.-Mzt. Plant of 14–18 inches. Partly in fruit. Flowers rose-lilac, eye yellow. Moist peaty pasture by streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

23062. **Androsace mucronifolia,** Watt, vel v. aff. Matted plant of 2–3 inches. Flowers rose, eye yellow. On screes and ledges of limestone cliffs on the Chien-chuan Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12,000 ft. July 1922. N.W. Yunnan.

23063. **Cladonia** sp. aff. **rangiferina** (Linn.), Web. On limestone rocks and cliffs on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

23064. **Andrachne chinensis,** Bunge, vel aff. Shrub of 1–3 ft. Flowers olive-green. Amongst dwarf scrub on dry rocky slopes in the Yangtze valley. Lat. 26° 50′ N. Long. 100° 25′ E. Alt. 6–7,000 ft. July 1922. N.W. Yunnan.

23065. **Euphorbia thymifolia,** Burm. Prostrate plant of 4–10 inches. In fruit. Stony dry pasture in the Yangtze valley. Lat. 26° 50′ N. Long. 100° 25′ E. Alt. 6–7,000 ft. July 1922. N.W. Yunnan.

23066. **Pinguicula alpina,** Linn. Plant of 1½–3 ins. Flowers deep creamy-yellow, more or less flushed purple-rose exterior. On wet rocks and boggy pasture by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

23067. **Rhamnella Forrestii,** W. W. Sm. Shrub of 4–6 ft. In fruit. Amongst scrub on dry rocky slopes in the Yangtze valley. Lat. 26° 50′ N. Long. 100° 25′ E. Alt. 7,000 ft. Aug. 1922. N.W. Yunnan.

23068. **Berberis.** Spinous shrub of 1½–2 ft. In fruit. On stony slopes amongst scrub on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11,000 ft. Aug. 1922. N.W. Yunnan.

23069. **Philadelphus Delavayi,** Henry. Shrub of 6–9 feet. Flowers fragrant, creamy-white. In open thickets by streams on the western flank of the Sungkwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

23070. **Lagotis yunnanensis,** W. W. Sm. Plant of 10–14 ins. Flowers white. Open stony pasture and amongst dwarf scrub in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. July 1922. N.W. Yunnan.

23071. **Polygala sibirica,** Linn. Plant of 5–8 inches. Flowers blue or pink. Open stony meadows and hillsides on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

23072. **Anemone rupicola,** Cambess. Plant of 2–5 inches. Flowers white, faintly flushed on exterior purplish-blue. Open stony meadows and hillsides on the western flank of the Sungkwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 12,000 ft. July 1922. N.W. Yunnan.

23073. **Androsace alchemilloides,** Franch. Tufted plant of 1–2 inches. Flowers white. On limestone screes, cliffs and stony pasture on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 14,000 ft. July 1922. N.W. Yunnan.

23074. **Nomocharis lophophora,** Balf. f. Plant of 3–4 inches. Flowers light to dark canary-yellow. On screes and stony pasture on the margins of forest and scrub on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. July 1922. N.W. Yunnan.

23075. **Astragalus** sp. aff. **yunnanensis,** Franch. Plant of 3–5 inches. Flowers light to dark orange-yellow. Stony alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 14,000 ft. July 1922. N.W. Yunnan.

23076. **Ajuga sciaphila,** W. W. Sm. Plant of 2–4 inches. Flowers blue. Shady dry pine forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

23077. **Buddleia incompta,** W. W. Sm. var. Shrub of 4–9 ft. Flowers rose-lavender, fragrant. Open dry hillsides amongst scrub on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. July 1922. N.W. Yunnan.

23078. **Lonicera Henryi,** Hemsl. Twining evergreen shrub of 6–14 ft. Flowers golden-yellow, non-fragrant. On scrub in thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

23079. **Osmanthus Forrestii,** Rehder. Spinous-leaved shrub of 10–20 ft. Flowers waxy creamy-white, strongly fragrant. Open thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

23080. **Prunus brachypoda,** Batal. vel aff. Shrub or tree of 20–40 ft. In fruit. Open mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. July 1922. N.W. Yunnan.

23081. **Thermopsis inflata,** Camb. vel aff. Plant of 12–18 inches. Flowers greenish-yellow. In open thickets and on alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. July 1922. N.W. Yunnan.

23082. **Alangium begoniifolium** (Roxb.), Baill. Shrub of 6–20 ft. Flowers golden-yellow. In open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

23083. **Viburnum atrocyaneum,** Clarke. Shrub of 4–8 feet. Flowers greenish-yellow. Open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 6–7,000 ft. July 1922. N.W. Yunnan.

23084. **Euonymus tingens,** Wall. Shrub of 15–25 ft. Flowers creamy-yellow, veined deep purple. Open thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft.. July 1922. N.W. Yunnan.

23085. **Loranthus sutchuenensis,** Lec. vel aff. Parasitic shrub of 2 ft. on various conifers and also species of *Pyrus*. Flowers exterior greyish, interior deep maroon. In mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–11,000 ft. July 1922. N.W. Yunnan.

23086. **Potentilla purpurea,** Royle. Plant of 3–5 inches. Flowers deep velvety crimson. On stony alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. July 1922. N.W. Yunnan.

23087. **Androsace sublanata,** Hand.-Mzt. Plant of 6–13 ins. Flowers pale rose. Stony open pasture on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 14,000 ft. July 1922. N.W. Yunnan.

23115. **Iris.** Plant of 20–24 inches. Flowers creamy-yellow, veined and marbled blue. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

23116. **Acer Davidi,** Franch. Shrub or tree of 20–40 ft. In fruit. Open mixed forests in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

23117. **Potentilla Veitchii,** Wils. Shrub of 2–3 ft. Flowers white. Open stony alpine meadows and slopes on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. July 1922. N.W. Yunnan.

23118. **Clematis montana,** Ham. forma. Scandent shrub of 4–8 ft. Flowers creamy-white, faintly flushed purplish on exterior. On scrub by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. July 1922. N.W. Yunnan.

23119. **Rosa sericea,** Lindl. forma. Spinous shrub of 2 ft. In fruit, fruits deep crimson. Amongst scrub by streams on the eastern flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 11,000 ft. Aug. 1922. N.W. Yunnan.

23120. **Lycium chinense,** Mill. Spinous shrub of 3–5 feet. Flowers purple, deepest at base. Amongst scrub by streams in the Lichiang valley. Lat. 27° N. Long. 100° 10′ E. Alt. 8–9,000 ft. Aug. 1922. N.W. Yunnan.

23121. **Iris.** Plant of 2–3 ft. Flowers deep purple, outer segments yellowish-green, laced and margined purple. Open boggy pasture and by streams on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

23122. **Vaccinium Delavayi,** Franch. Shrub of 1–2 feet. Flowers waxy creamy-yellow. On ledges of cliffs on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

23123. **Primula blattariformis,** Franch. Plant of 10–14 ins. Flowers fragrant, pale rose with a greenish-yellow eye. Open rocky dry slopes on the mountains north of Yungpeh. Lat. 26° 55′ N. Long. 100° 50′ E. Alt. 9–10,000 ft. July 1922. N.W. Yunnan.

23124. **Nothopanax Delavayi,** Franch. Shrub of 8–12 ft. Flowers yellowish-green. Open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. July 1922. N.W. Yunnan.

23125. **Sedum.** Plant of 4–6 inches. Flowers white, tinged deep rose-purple exterior. On rocks and cliffs in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. July 1922. N.W. Yunnan.

23126. **Lactuca Souliei,** Franch. Plant of 1–1½ inches. Flowers brilliant deep blue. On limestone screes and ledges of cliffs on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 14,000 ft. Aug. 1922. N.W. Yunnan.

23127. **Primula pulchella,** Franch. Plant of 6–10 inches. In fruit. Open stony alpine pasture on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. Aug. 1922. N.W. Yunnan.

23128. **Picris hieracioides,** Linn. forma. Plant of 14–20 ins. Flowers deep orange. Open stony meadows on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 13,000 ft. Aug. 1922. N.W. Yunnan.

23129. **Ophiopogon dracaenoides,** Hook f. Creeping plant of 4–6 inches. Flowers sweetly fragrant, waxy white, deep rose-purple on exterior. Fruits maroon-purple. Stony limy meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–12,000 ft. July 1922. N.W. Yunnan.

23130. **Primula Littoniana,** G. Forrest. In fruit. On moist alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12,000 ft. Aug. 1922. N.W. Yunnan.

23131. **Lilium roseum,** Wall. Plant of 1-2¼ ft. Flowers pale purplish-rose. Open alpine meadows on the margins of scrub and conifer forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

23132. **Vaccinium Delavayi,** Franch. Shrub of 1–2 feet. Flowers waxy yellow, tinged rose exterior. On limestone cliffs in shady conifer forest on the mountains north of Yung-peh. Lat. 26° 55′ N. Long. 100° 50′ E. Alt. 11,000 ft. Aug. 1922. N.W. Yunnan.

23133. **Cassiope selaginoides,** Hook. f. et Thoms. Tufted plant of 6-9 inches. In fruit. As an undershrub in rhododendron scrub in shady side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

23134. **Leguminosae.** Scandent shrub of 12–20 ft. Foliage only. In dense thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

23135. **Chionanthus retusus,** Lindl. Shrub of 20 ft. In fruit, fruits purple-black. In thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8,000 ft. Aug. 1922. N.W. Yunnan.

23157. **Cotoneaster glaucophylla,** Franch. Shrub of 5–8 ft. In fruit, fruits bright scarlet-crimson. Open dry hillsides on the western slopes of the Chu-tong valley. Lat. 25° 25′ N. Long. 99° 43′ E. Alt. 8,000 ft. Dec. 1922. N.W. Yunnan.

23158. **Litsea citrata,** Blume, var. Shrub of 20–25 feet. Flowers fragrant, light yellow. In open thickets and forests on the divide between the Yang-pi and Chu-tong valleys. Lat. 25° 29′ N. Long. 99° 46′ E. Alt. 9,000 ft. Dec. 1922. N.W. Yunnan.

23159. **Spilanthes Acmella,** Linn. Plant of 12–20 inches. Flowers dull orange-yellow. Boggy pasture and moist shady banks by streams on the divide between the Yang-pi and Chu-tong valleys. Lat. 25° 28′ N. Long. 99° 45′ E. Alt. 8,000 ft. Dec. 1922. N.W. Yunnan.

23160. **Cotoneaster angustifolia,** Franch. Spinous shrub of 6–12 ft. In fruit, fruits bright flame-crimson. In open scrub by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8–10,000 ft. Dec. 1922. N.W. Yunnan.

23161. **Vaccinium Dunalianum,** Wight. Shrub of 4–6 feet. Flowers dull creamy-white, anthers orange. Amongst scrub on bouldery slopes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

23162. **Campylotropis chinensis,** Bunge. Shrub of 2–4 feet. Very free-flowering. Flowers deep lavender-blue, drying purple, carina white, tipped lavender-blue. Amongst dwarf scrub on dry clay banks in ravines on the Pu-piao-Salwin divide. Lat. 25° 6′ N. Long. 99° 6′ E. Alt. 8,000 ft. Dec. 1922. N.W. Yunnan.

23163. **Fern.** (Infertile plant.) Plant of 1 inch. On moist shady banks on the Yang-pi valley. Lat. 25° 40′ N. Long. 100° 3′ E. Alt. 6,000 ft. Dec. 1922. N.W. Yunnan.

23164. **Juniperus formosana,** Hayata. Shrub of 15–25 feet. In fruit. In open forest on the western flank of the Sungkwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 8,000 ft. Aug. 1922. N.W. Yunnan.

23165. **Primula bathangensis,** Petitm. Plant of 2 ft. Flowers fragrant, orange. Open, dry, rocky slopes on the mountains north of Yungpeh. Lat. 26° 55′ N. Long. 100° 50′ E. Alt. 8,000 ft. Aug. 1922. N.W. Yunnan.

23166. **Jasminum taliense,** W. W. Sm. Scandent shrub of 6–20 ft. Flowers white, flushed purple-rose exterior, fragrant. In thickets by streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 7–8,000 ft. July 1922. N.W. Yunnan.

23167. **Primula blattariformis,** Franch. Plant of 6–12 inches. Flowers rose. Open, rocky, grassy slopes on the mountains north of Yung-peh. Lat. 26° 55′ N. Long. 100° 50′ E. Alt. 7,000 ft. July 1922. N.W. Yunnan.

23168. **Draba surculosa,** Franch. vel aff. Tufted plant of 6–9 inches. Flowers pale orange-yellow. Open stony slopes and on cliffs on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

23169. **Sageretia theezans,** Brongn. Spinous shrub of 6–9 ft. Flowers dull olive-yellow. Open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. July 1922. N.W. Yunnan.

23170. **Hemiphragma heterophyllum,** Wall. Trailing plant of 1–2 ft. In fruit, fruits scarlet. In open pine forests and on dry meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–11,000 ft. Aug. 1922. N.W. Yunnan.

23171. **Arenaria Delavayi,** Franch. vel aff. Plant of 3–5 ins. Flowers white. Open stony pasture on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11–12,000 ft. Aug. 1922. N.W. Yunnan.

23172. **Geranium Donianum,** Sweet. Plant of 2½–6 inches. Flowers deep rose, veined crimson. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. Aug. 1922. N.W. Yunnan.

23173. **Alangium begoniifolium** (Roxb.), Baill. Shrub of 20–25 ft. Foliage only. In open thickets and mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 28′ E. Alt. 8,000 ft. Aug. 1922. N.W. Yunnan.

23174. **Begonia Labordei,** Lévl. Plant of 12–14 inches. Flowers pink. Shady rocks by streams and banks in forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 28′ E. Alt. 8,000 ft. Aug. 1922. N.W. Yunnan.

23175. **Cyananthus formosus,** Diels. Prostrate plant of several inches. Flowers bright purple-blue. On screes and stony meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 28′ E. Alt. 12–14,500 ft. Aug. 1922. N.W. Yunnan.

23176. **Rhus javanica,** Blume. Shrub of 20–30 ft. Flowers dull creamy-yellow. In open thickets on dry hillsides on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 28′ E. Alt. 7–8,000 ft. July 1922. N.W. Yunnan.

23177. **Codonopsis Bulleyana,** Diels. Plant of 1–1½ feet. Flowers pale grey-blue, veined and netted a deeper shade. Grassy stony slopes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 28′ E. Alt. 11–12,000 ft. July 1922. N.W. Yunnan.

23178. **Osmanthus Forrestii,** Rehder. Spinous-leaved shrub of 10–25 ft. Young foliage non-spinous. In open thickets on dry hillsides on the mountains north of Yung-peh. Lat. 26° 55′ N. Long. 100° 50′ E. Alt. 8–9,000 ft. Aug. 1922. N.W. Yunnan.

23179. **Buddleia myriantha,** Diels, vel aff. Shrub of 5–8 ft. Flowers fragrant, soft lavender-purple. Open thickets by streams on the N.W. flank of the Lichiang range. Lat. 27° 20′ N. Long. 100° 10′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

23180. **Acer Davidi,** Franch. Shrub of 20 ft. In fruit. Open thickets by streams in side valleys on the mountains north of Yung-peh. Lat. 26° 55′ N. Long. 100° 50′ E. Alt. 8–9,000 ft. Aug. 1922. N.W. Yunnan.

23181. **Euonymus porphyreus,** Loesen. Shrub of 10–25 ft. In fruit. Open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 28′ E. Alt. 11–12,000 ft. Aug. 1922. N.W. Yunnan.

23182. **Lonicera Maackii,** Maxim. var. **podocarpa,** Franch. Shrub of 8–16 ft. In fruit, fruits pale yellowish-red. Open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 28′ E. Alt. 8–10,000 ft. Aug. 1922. N.W. Yunnan.

23183. **Lonicera ligustrina,** Wall. var. **yunnanensis,** Rehder. Shrub of 3–6 ft. In fruit, fruits deep purple-blue. By streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 28′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

23184. **Caryopteris Forrestii,** Diels. Shrub of 1–2 ft. Foliage strongly aromatic, flowers greenish-white. Open dry, stony meadows on the mountains north of Yung-peh. Lat. 26° 55′ N. Long. 100° 50′ E. Alt. 7–8,000 ft. Aug. 1922. N.W. Yunnan.

23185. **Delphinium grandiflorum,** Linn. var. Plant of 1½–2½ ft. Flowers bright pure blue. Open stony pasture on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 28′ E. Alt. 8–11,000 ft. Aug. 1922. N.W. Yunnan.

23186. **Anemone glaucifolia,** Franch. Plant of 2½–3 feet. Flowers pale soft purplish-blue. Open, dry, stony meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 30′ N. Alt. 9–11,000 ft. Aug. 1922. N.W. Yunnan.

23187. **Androsace Aizoon,** Duby, var. **coccinea,** Franch. Plant of 8–14 inches. Flowers deep clear vermilion, drying deep crimson. Ledges and crevices of dry limestone cliffs and on screes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

23188. **Cydonia Delavayi** (Franch.), Cardot. Shrub of 20 ft. Foliage only. In open thickets on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

23189. **Lonicera Henryi,** Hemsl. Scandent shrub of 9–20 ft. In fruit, fruits deep purple. On scrub by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

23190. **Roscoea.** Plant of 2 ft. Flowers (?). Marshy pasture on the margins of forest on the Chien-chuan-Mekong divide. Lat. 26° 36′ N. Long. 99° 40′ E. Alt. 7–8,000 ft. Aug. 1922. N.W. Yunnan.

23191. **Meconopsis Delavayi,** Franch. Plant of 9–12 inches. In fruit. Open stony meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–14,000 ft. Aug. 1922. N.W. Yunnan.

23192. **Saxifraga pallida,** Wall. var. **typica,** Engl. et Irmsch. fa. **corymbiflora,** Engl. et Irmsch. Plant of 5–9 ins. Flowers creamy-white. Stony open meadows and on screes and ledges of cliffs on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12–14,000 ft. Aug. 1922. N.W. Yunnan.

23193. **Cyananthus Hookeri,** Clarke, var. **hispidus,** Franch. Semi-prostrate plant of several inches. Flowers dull deep blue. Open stony meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

23194. **Saxifraga Balfourii,** Engl. et Irmsch. Plant of 5–10 inches. Flowers orange-yellow. On rocks, ledges of cliffs and stony meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12,000 ft. Aug. 1922. N.W. Yunnan.

23195. **Saxifraga signata,** Engl. et Irmsch. Plant of 2–4 ins. Flowers pale yellow, exterior base dull purple, interior base minutely speckled deep crimson-maroon. Open limestone screes, rocks and cliffs on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. Aug. 1922. N.W. Yunnan.

23196. **Cyananthus formosus,** Diels. Prostrate plant spreading for several inches. Flowers deep purplish-blue. Open stony meadows and on screes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. Aug. 1922. N.W. Yunnan.

23197. **Ribes glaciale,** Wall. Shrub of 2–4 ft. In fruit, fruits dull crimson. Open scrub on stony alpine slopes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. Aug. 1922. N.W. Yunnan.

23198. **Codonopsis meleagris,** Diels. Plant of 12–24 inches. Flowers greyish-yellow, marbled and stained deep purple. Open alpine meadows and in open conifer forests on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13–14,000 ft. Aug. 1922. N.W. Yunnan.

23199. **Lonicera adenophora,** Franch. Erect shrub of 12–20 ft. In immature fruit, fruits deep clear wine-crimson. Open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8–10,000 ft. Aug. 1922. N.W. Yunnan.

23200. **Cyananthus Hookeri,** Clarke, var. **hispidus,** Franch. Erect plant of 6–12 inches. Flowers deep dull purplish-blue. Open stony meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 12,000 ft. Aug. 1922. N.W. Yunnan.

23201. **Sedum.** Succulent plant of 1–3 inches. Flowers deep rose-crimson. Open stony meadows and on boulders and cliffs on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 28′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

23202. **Abies chensiensis,** Van Tieghem. Tree of 60–80 ft. In fruit. In mixed forests on the Chien-chuan-Mekong. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 11,000 ft. Oct. 1922. N.W. Yunnan.

23203. **Abies.** (Probably identical with No. 22547). Tree of 50–60 ft. In fruit. In Abies forest on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 28′ E. Alt. 13–14,000 ft. Oct. 1922. N.W. Yunnan.

23204. **Abies.** (Probably identical with No. 22547). Tree of 60 ft. In fruit. Same locality and situation and date.

23205. **Abies.** (Probably identical with No. 22547). Tree of 50–60 ft. In fruit. In conifer forests on the western slopes of the Sungkwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 11,000 ft. Oct. 1922. N.W. Yunnan.

23206. **Abies Delavayi,** Franch. Tree of 40–70 ft. Forming scattered forests on the eastern flank of the Tali range. Lat. 25° 40′ N. Long. 100° 7′ E. Alt. 9–11,000 ft. Oct. 1922. N.W. Yunnan.

23207. **Abies.** (Probably identical with No. 22547). Tree of 50–60 ft. In fruit and flower. Conifer forests on the mountains north of Yung-peh. Lat. 26° 55′ N. Long. 100° 50′ E. Alt. 11,000 ft. Oct. 1922. N.W. Yunnan.

23208. **Tsuga Forrestii,** Downie. Tree of 40–50 ft. In fruit. In mixed forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

23209. **Tsuga Forrestii,** Downie. Tree of 40–70 ft. In fruit. In mixed and conifer forests on the mountains north of Yung-peh. Lat. 26° 55′ N. Long. 100° 50′ E. Alt. 10–11,000 ft. Oct. 1922. N.W. Yunnan.

23210. **Briggsia amabilis,** Craib. Plant of 6–12 ins. Flowers pale orange-yellow, spotted and blotched purplish-orange. On damp rocks, cliffs and trees in shady side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 30′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

23211. **Sedum Oreades,** R. Hamet. Matted plant of ½–1½ inches. Flowers pale golden-yellow. Moist rocks and stony meadows in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 30′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

23212. **Swertia.** Plant of 10–12 inches. Flowers yellow, blotched and lined purplish at base. Open alpine meadows and slopes on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 30′ E. Alt. 13–14,500 ft. Sept. 1922. N.W. Yunnan.

23213. **Lonicera hispida,** Pall. Dwarf shrub of 6–12 inches. Flowers soft yellow, tube darkest. Open stony grassy slopes on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 30′ E. Alt. 13,000 ft. Aug. 1922. N.W. Yunnan.

23214. **Symplocos crataegoides,** Ham. Shrub of 6–12 ft. In fruit. Open thickets on dry hillsides on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

23215. **Buddleia Forrestii,** Diels. Shrub of 12–16 ft. Flowers fragrant, deep lavender-purple, interior darkest. In thickets by streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

23216. **Photinia glomerata,** Rehd. et Wils. Shrub of 20–25 ft. In fruit, fruits dull orange. In open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10,000 ft. Sept. 1922. N.W. Yunnan.

23217. **Rhus punjabensis,** Stewart, var. **sinica,** Rehd. et Wils. Shrub of 10–16 ft. Flowers dull greenish-yellow. In thickets on dry hillsides on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

23218. **Acer oblongum,** Wall. var. Shrub of 20–30 feet. Foliage only. In open thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

23219. **Apios carnea,** Benth. Scandent plant of 4–8 feet. Flowers rose. On grass and scrub on dry side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9,000 ft. July 1922. N.W. Yunnan.

23220. **Dracocephalum Wilsoni** (Duthie), Dunn. Plant of 12–20 inches. Foliage pleasantly aromatic, flowers purplish-blue. Open rocky meadows and slopes on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12-13,000 ft. Aug. 1922. N.W. Yunnan.

23221. **Lilium taliense,** W. W. Sm. Plant of 4–8 ft. Flowers fragrant, pure white, spotted purple-crimson. Margins of open pine forests and amongst scrub on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 28′ E. Alt. 9–11,000 ft. Aug. 1922. N.W. Yunnan.

23222. **Primula sinopurpurea,** Balf. f. Plant of 14 16 inches. In fruit. Open, stony meadows and slopes on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–14,000 ft. Sept. 1922. N.W. Yunnan.

23223. **Cercis racemosa,** Oliv. Shrub of 20–30 ft. In fruit. Open thickets by streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 8-9,000 ft. Aug. 1922. N.W. Yunnan.

23224. **Primula sinopurpurea,** Balf. f. Plant of 12–16 inches. In fruit. Open, moist, stony meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 28′ E. Alt. 12–13,000 ft. Sept. 1922. N.W. Yunnan.

23225. **Cyananthus macrocalyx,** Franch. var. vel aff. Plant of 7–9 inches. Flowers pale yellow, tube yellow, lined purple. Open stony meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 28′ E. Alt. 14,000 ft. Sept. 1922. N.W. Yunnan.

23226. **Monotropa hypopithys,** Linn. var. **lanuginosa,** Michx. Plant of 3–9 inches, fleshy, creamy-yellow. In dry pine forests on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 30′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

23227. **Tofieldia yunnanensis,** Franch. Tufted plant of 4-8 inches. Flowers white. On rocks and ledges of cliffs in shady dry side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–12,000 ft. Aug. 1922. N.W. Yunnan.

23228. **Allium yunnanense,** Franch. Plant of 9–12 inches. Flowers magenta-rose. Open stony pasture and slopes on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–14,000 ft. Aug. 1922. N.W. Yunnan.

23229. **Roscoea alpina,** Royle, forma. Plant of 6–10 inches. Flowers pure white. Alpine meadows on the margins of forest and scrub on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

23230. **Celastrus glaucophylla,** Rehder et Wilson, vel aff. Scandent shrub of 10–20 ft. In fruit, seeds deep orange. Margins of thickets on trees and scrub in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

23231. **Potentilla eriocarpa,** Wall. Tufted plant of 6–9 inches. Flowers yellow. On rocks and ledges of cliffs on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

23232. **Picea brachytyla,** Pritzel. Tree of 50–60 feet. In conifer forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

23233. **Prunus.** Shrub of 15–30 feet. In fruit. In open thickets by streams on the Chien-chuan-Mekong-divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Sept. 1922. N.W. Yunnan.

23234. **Senecio koualapensis,** Franch. vel aff. Plant of 16–20 inches. Flowers orange-yellow. Meadows on the margins of thickets and forests on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

23235. **Allium Victorialis,** Linn. Plant of 2–2½ ft. Flowers white. Open alpine meadows on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 12–13,000 ft. Aug. 1922. N.W. Yunnan.

23236. **Bauhinia comosa,** Craib. Scandent shrub of 10–15 ft. Flowers dull yellow. In thickets and on scrub in open dry situations on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. Aug. 1922. N.W. Yunnan.

23237. **Styrax langkongensis,** W. W. Sm. Shrub of 2 ft. In fruit. Open dry hillsides amongst scrub on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8–9,000 ft. Sept. 1922. N.W. Yunnan.

23238. **Buddleia caryopteridifolia,** W. W. Sm. Shrub of 2–4 ft. Flowers, exterior grey, interior violet-lavender, fragrant. Dry stony hillsides amongst scrub on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

23239. **Trachelospermum cathayanum,** Schneid. Scandent shrub of 10–20 ft. Flowers fragrant, waxy white. On scrub and rocks in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8,000 ft. July 1922. N.W. Yunnan.

23240. **Morus longistylus,** Diels. Shrub of 15–25 feet. In fruit. In thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 7–8,000 ft. Sept. 1922. N.W. Yunnan.

23241. **Clematis pseudopogonandra,** Finet et Gagnep. Scandent shrub of 12–20 ft. Flowers dull yellowish-maroon, margined grey. On scrub by streams in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–12,000 ft. Aug. 1922. N.W. Yunnan.

23242. **Dioscorea panthaica,** Prain et Burkill. ♂ Scandent plant of 6–12 ft. Flowers yellowish-green. On scrub in thickets in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8–10,000 ft. Aug. 1922. N.W. Yunnan.

23243. **Prunus Mume,** Sieb. et Zucc. vel v. aff. Shrub of 15–20 ft. In fruit. Open thickets on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10,000 ft. Aug. 1922. N.W. Yunnan.

23244. **Primula Poissonii,** Franch. Plant of 18–10 inches. Flowers deep purplish-rose, deepest in bud. Marshy meadows on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8–10,000 ft. Aug. 1922. N.W. Yunnan.

23245. **Primula werringtonensis,** G. Forrest. Plant of 6–8 ins. In fruit. Shady banks in woods and by stream in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 8–10,000 ft. Aug. 1922. N.W. Yunnan.

23246. **Primula Littoniana,** G. Forrest, var. **robusta.** Plant of 2–2½ ft. In fruit. Open moist alpine meadows. Mountains N.E. of Mu-li. Lat. 28° 15′ N. Long. 100° 53′ E. Alt. 12–13,000 ft. Sept. 1922. S.W. Szechuan.

23247. **Tetrastigma serrulatum,** Planch. Scandent plant of 6–10 ft. In fruit, fruits ruddy purple. On scrub and rocks by streams on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 9–10,000 ft. Sept. 1922. N.W. Yunnan.

23248. **Zizyphus montana,** W. W. Sm. Spinous shrub of 6–10 ft. In fruit. Dry rocky slopes amongst scrub on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

23249. **Acalypha szechuanensis,** Hutch. var. Shrub of 3–5 ft. Flowers olive-brown. Amongst scrub and boulders on dry slopes on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9,000 ft. Aug. 1922. N.W. Yunnan.

23250. **Tribulus terrestris,** Linn. Prostrate or semi-prostrate plant of 1–2 ft. Flowers pale yellow. On sandy banks by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 7,000 ft. Aug. 1922. N.W. Yunnan.

23251. **Itea yunnanensis,** Franch. Spinous-leaved shrub of 6–9 ft. Flowers olive-yellow. Open thickets by streams on the western flank of the Sungkwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 9–10,000 ft. Aug. 1922. N.W. Yunnan.

23252. **Primula septemloba,** Franch. Plant of 1½–2 feet. Flowers deep purple-rose. Margins of woods and thickets on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

23253. **Rhus punjabensis,** Stewart, var. **sinica,** Rehd. et Wils. Shrub of 20–30 ft. Flowers creamy-yellow. Open thickets on the western flank of the Sungkwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 7–8,000 ft. Aug. 1922. N.W. Yunnan.

23254. **Rhus verniciflua,** Stokes. Tree of 25–45 ft. In fruit. Open forests on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 7–8,000 ft. Aug. 1922. N.W. Yunnan.

23255. **Pyrus rhamnoides,** DC. Shrub of 20–25 ft. In fruit, fruits green. In open thickets by streams on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 9–10,500 ft. Sept. 1922. N.W. Yunnan.

23256. **Paraquilegia microphylla,** Drumm. et Hutch. Tufted plant of 4–6 inches. Flowers semi-pendulous, pale purplish-blue, anthers orange-yellow. Forming cushions on cliffs on the western flank of the Sungkwei range. Lat. 26° 18′ N. Long. 100° 12′ E. Alt. 11–12,000 ft. Aug. 1922. N.W. Yunnan.

23257. **Didissandra taliensis,** Craib, fa. **robustior,** Craib. Plant of 6–8 inches. Flowers pale blue, tipped white. Forming rosettes on dry shady rocks in side valleys on the Chien-chuan-Mekong divide. Lat. 26° 40′ N. Long. 99° 40′ E. Alt. 10–11,000 ft. Aug. 1922. N.W. Yunnan.

23258. **Diapensia purpurea,** Diels. Prostrate trailing shrub of many inches. Flowers bright rose. On moist rocks and boggy peaty pasture on the Chien-chuan-Mekong divide. Lat. 26° 30′ N. Long. 99° 40′ E. Alt. 13,000 ft. Aug. 1922. N.W. Yunnan.

THE ROYAL BOTANIC GARDEN, EDINBURGH.

THE Royal Botanic Garden, Edinburgh, is one of two Gardens maintained by the State in the United Kingdom, the other being the Royal Gardens at Kew in England. It occupies an unequally-sided quadrilateral area of 57,648 acres (bounded upon all sides by public roads and dwelling-houses) on the north side of Edinburgh—about a mile from the shore of the Firth of Forth. Its highest point, at Inverleith House—the official residence of the Regius Keeper of the Garden—towards the north-west, is 109 feet above sea-level, and thence the ground falls away on all sides. The lowest point—a depression 48 feet above sea level, with an east and west trend through the middle of the Garden—is the site of an old bog, and the ground rises again to the south of the depression. The surface soil is generally alluvial sand resting on clay at considerable depth. In the lower part of the area the clay comes to the surface.

There are two entrances to the grounds—one upon the east side from Inverleith Row into the **Garden**, the other upon the west side from Arboretum Road into the **Arboretum**. The entrance to the **Laboratories, Lecture Halls, Library,** and to the **Office** for Garden business is from Inverleith Row.

The **Garden** is open daily from **9 a.m.** on **Week-days** and from **11 a.m.** on **Sundays** until sunset.

The **Plant-Houses** are open from **1 p.m.** until **5 p.m.**, or until sunset if this be earlier.

The **Museum** is open on **Week-days** from **9 a.m.** until **5 p.m.** and on **Sundays** from **1 p.m.** until **5 p.m.**

The **Herbarium** is open on **Week-days** from **9 a.m.** until **5 p.m.**, excepting **Saturday,** when it is open until **1 p.m.**

The **Library** is open on **Week-days** from **9 a.m.** until **5 p.m.**, excepting **Saturday,** when it is open until **1 p.m.**

The **Office** for transaction of business with the Public and with Tradesmen is open on **Week-days** from **9 a.m.** until **5 p.m.**, excepting **Saturday,** when it is open until **1 p.m.**

[Notes R.B.G., Edin., November 1924.]

Staff of the Royal Botanic Garden, Edinburgh, at November 1924.

ESTABLISHMENT.

Regius Keeper	William Wright Smith, M.A., F.L.S., F.R.S.E.
Assistant Keeper	Vacant
Assistant in Herbarium	William Edgar Evans, B.Sc., F.R.S.E.
Assistant in Laboratory	Matthew Young Orr
Assistant in Library	James Todd Johnstone, M.A., B.Sc.
Assistant in Museum	Harry Frank Tagg, F.L.S.
Assistant in Studio	Robert Moyes Adam
Curator	Robert Lewis Harrow, F.R.H.S.
Assistant Curator	Laurence Baxter Stewart
Clerical Assistant	Jean Brockie
Do.	David Ramsay Oliver
Typist	Elizabeth Murdison Reid
Medical Officer	James Walter M'Donald, M.B.

Foreman of Arboretum	Charles Lamont
Foreman of Glass Department	James John Campbell
Foreman of Herbaceous Department	Alexander M'Cutcheon

RULES for the Royal Botanic Garden and Arboretum in connection with the Regulations prescribed by "The Parks Regulation Act, 1872."

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1. No unauthorised Person may ride or drive in this Garden or in the Arboretum, and no Wheelbarrow, Truck, Bath-chair, Perambulator, Cycle, or other Vehicle or Machine, is allowed to enter, except with the written permission of the Keeper. Children under ten years of age are not admitted unless accompanied by a Parent or suitable Guardian.

2. No Horses, Cattle, Sheep or Pigs are allowed to enter.

3. No Dogs are admitted.

4. No Bags, Baskets, or Parcels, no Flowers, and no implements for games may be brought in; Artists and Photographers may not bring in their Apparatus without written permission from the Keeper.

> NOTE.—*The foregoing Rules shall not apply to persons going to or leaving Inverleith House by the road leading from the Arboretum Road Gate to the House.*

5. Visitors are to enter and leave the Plant-Houses by the Doors according to the Notices affixed thereon.

6. Smoking is not allowed in the Plant-Houses.

7. No Person shall touch the Plants or Flowers.

8. Picnics and luncheon parties are not allowed.

9. No unauthorised Person shall Drill or practice Military Evolutions or use Arms or play any Game or Music, or practise Gymnastics, or sell or let any Commodity.

10. No unauthorised Public Address may be delivered in the Garden or Arboretum. No Performance or Representation either spoken or in dumb show shall be given in any part of the Garden or Arboretum, unless by permission of the Commissioners of His Majesty's Works and Public Buildings. No Person shall use any obscene, indecent, or blasphemous words, expressions, or

gestures, or do any act calculated to provoke a breach of the Peace, in the course of, or in connexion with, any speech, address, performance, recitation, or representation. No money shall be solicited or collected in connexion with any performance, recitation, or representation, except by permission of the Commissioners of His Majesty's Works and Public Buildings.

11. Large parties must be broken up to prevent crowding.

12. Climbing the Trees, Railings or Fences is forbidden.

13. Birds'-nesting, and taking, destroying, or injuring Birds or Animals are forbidden.

14. The distribution of Handbills, Advertisements, and other Papers by the Public is forbidden.

Dated the 28th Day of April, 1904.

Sealed with the Common Seal of the Commissioners of His Majesty's Works and Public Buildings.

Schomberg K. M'Donnell,
Secretary.

Seal.

Historic Notice.

In the year 1670 a small portion of ground, known as St. Ann's Yards, lying to the south of Holyrood House, and usually let to market gardeners by the Hereditary Keeper of Holyrood House, was occupied by two eminent Edinburgh physicians, **Andrew Balfour** and **Robert Sibbald** for the making of a Physic Garden, and **James Sutherland** was appointed to the "Care of the Garden." This was the foundation of the Royal Botanic Garden of Edinburgh, which is therefore, after that of Oxford (founded in 1632), the oldest in Great Britain. The Garden was stocked with plants from the private Garden of Dr Andrew Balfour, in which for some years he had been accumulating medicinal plants, and also in great measure from that at Livingston in West Lothian, the laird of which, Patrick Murray, was much interested in the growing of useful plants. Shortly thereafter, but at what precise date has not yet been ascertained, Sutherland became custodian of the Royal Garden, which lay on the north side of the Palace, and it became a Physic Garden for instruction, whilst the original plot in St. Ann's Yards was, apparently, given up.

In 1676 the same physicians acquired from the Town Council of Edinburgh a lease of the Garden of Trinity Hospital and adjacent ground for the purpose of a Physic Garden in addition to the Garden already existing at Holyrood, and they appointed the same James Sutherland (1639?–1719) to be "Intendant" of this Garden. The site of this Garden, which for convenience of reference may be called the Town's Botanic Garden, was the ground lying between the base of that portion of the Calton Hill upon which the prison is built and the North Bridge, and it is now occupied by a portion of the Waverley Station of the North British Railway. The name Physic Garden attached to a street in the vicinity is a reminiscence of the existence of the Garden at this spot.

About 1702 another Botanic Garden was established in Edinburgh in the ground immediately adjacent to the College Buildings, apparently on the site of the present South College Street. This was the College Garden, and of it James Sutherland became also custodian.

Thus in the early years of the eighteenth century there were in Edinburgh three distinct Botanic or Physic Gardens—one at Holyrood, the Royal Garden; one around Trinity Hospital, The Town's Garden; and one beside the College, the College Garden—all under the care of James Sutherland.

Sutherland from the first made use of the Royal Garden for giving "instruction in Botany to the Lieges," and received a royal warrant appointing him Botanist to the King in Scotland, and empowering him to "set up a Profession of Botany" in this Garden. When the Town's Garden was created the Town Council appointed him to lecture on Botany as Professor in the Town's College, now the University of Edinburgh. In 1683 he published his "Hortus Medicus Edinburgensis, or a Catalogue of the Plants in the Physical Garden at Edinburgh," from which and from other published notices we learn that between two and three thousand plants were in cultivation. There are no data available from which to determine how these plants were distributed between the several Gardens at the date of publication of Sutherland's catalogue.

In 1706 Sutherland resigned the care of the Town's Garden and the College Garden as well as his Professorship in the University, but, remaining King's Botanist, he retained the care of the Royal Garden at Holyrood. Charles Preston (1660–1771) was appointed his successor by the Town Council, and there were thus established rival Gardens and rival Professors of Botany in Edinburgh. Charles Preston was succeeded in 1712 in his offices by his brother George Preston (1656–1749). Neither of the Prestons had ever the care of the Royal Garden.

Sutherland's appointment as King's Botanist, Keeper of the Royal Garden, and Regius Professor of Botany was held during the pleasure of the Sovereign, and on the death of Queen Anne in 1714 he was not continued in office by George I.

In 1715 **William Arthur** (1680–1716) received a commission as successor to Sutherland, but as he was implicated in an unsuccessful Jacobite plot to seize the Castle, he did not hold the office long.

He was succeeded in 1716 by **Charles Alston** (1685–1760). In 1724 the College Garden, having fallen into disorder, was turned to other uses; and in 1729, George Preston having retired, the Town Council appointed, as his successor in the charge of the Town's Garden and as Professor of Botany in the University, Charles Alston, who as King's Botanist had already the charge of the Royal Garden and was Regius Professor of Botany. Through him, after separation for a quarter of a century, the Royal Garden and the Town's Garden were again combined under one Keeper, and the Regius Professorship of Botany and the University Professorship were similarly united. They have so continued to the present time.

In 1763, the Royal Garden and the Town's Garden proving too small and otherwise unsatisfactory, **John Hope** (1725–1786), who had succeeded Alston in his offices in 1761, proposed a transference of the two to a more congenial site in which they could be combined. At first it was intended to secure ground to the south of George Watson's Hospital—the area upon which much of the present Royal Infirmary is built—but this not being possible, five acres of ground to the north side of Leith Walk, below the site now occupied by Haddington Place, were chosen. As Hope proposed to transfer the collections in the Royal Garden to the new Garden he was able to secure the support of the Treasury to his scheme, and the selected ground was leased in name of the Barons of Exchequer. At the same time the Town Council agreed to contribute £25 annually to the support of the Garden, the sum being the amount of rent expected from the letting of the old Town's Garden. The plants from both Gardens were transferred to the ground at Leith Walk, and from this date there has been only one Botanic Garden in Edinburgh. The site thus secured for the Garden proved, however, only a temporary one.

Daniel Rutherford (1749–1819), who in 1786 succeeded Hope in his offices, cast about him for a spot in which more ground would be available for the extension of the Garden; and eventually in 1815 nine and a half acres of the land lying to the east of Holyrood Palace, and forming the ground of Belleville or Clockmill, was fixed upon as a site. This selection gave rise to controversy, which was prolonged, and Rutherford died before any arrangements for the transference of the Garden had been made.

Robert Graham (1786–1845), his successor, appointed in 1820, preferred the more open site of the Inverleith property which the Garden now occupies, and fourteen acres of the Field or Park of Inverleith, known as Broompark or Quacaplesink, were purchased by the Barons of Exchequer from Mr James Rocheid, its owner, in 1820, the lease of the Leith Walk Ground being sold. By 1823 all the plants had been transferred to the new Garden.

In 1858, during the Keepership of **John Hutton Balfour** (1808–1884), who succeeded Graham in 1845, a further addition, by purchase from the proprietor of Inverleith, of a narrow belt of two and a half acres was made to the Garden on the west side; and in 1865 the Caledonian Horticultural Society having resigned to the Crown its lease of the ten acres of adjoining ground which it had occupied since 1824 as an experimental Garden, this ground was also made part of the Botanic Garden. Finally the present area of the Garden was completed in 1876, when the Town Council purchased from the Fettes Trustees twenty-seven and three-quarter acres of Inverleith property on the west side of the Garden and transferred it to the Crown for the purpose of making an Arboretum in connection with the Garden; the Crown at the same time purchased Inverleith House and two and a half acres of additional ground.

In 1879, **Alexander Dickson** (1836–1887) became Queen's Botanist, Regius Keeper and Professor, and held these appointments until his death in 1887. During his term of office the Arboretum was opened to the public.

He was succeeded by **Sir Isaac Bayley Balfour** (1853–1922), during whose term of office the Botanic Garden reached its present extended development as a centre of botanical and horticultural research and instruction. In the necessary re-arrangements the outstanding features have been the removal of the dividing wall between the Arboretum and the Botanic Garden, the laying out of the Arboretum according to the various genera of trees and shrubs, the formation of a noteworthy rock garden and the extension of a herbaceous border along the North side of the Garden. The plant-houses have in many cases been re-built and largely added to. Complete reorganisation of the laboratories and Garden offices with additional accommodation and equipment has permitted of the establishment of a botanical school which has attracted and continues to attract many research workers and students of Botany and Horticulture.

Regius Keepers (R.K.)
from the date of
Foundation of the Garden.

James Sutherland	Born 1639? R.K. 12th January, 1699.* Not confirmed, 1714. Died 24th June, 1719.
William Arthur	Born September, 1680. R.K. 10th May, 1715. Died 1716.
Charles Alston	Born 24th October, 1685. R.K. 30th June, 1716. Died 22nd November, 1760.
John Hope	Born 10th May, 1725. R.K. 13th April, 1761. Died 10th November, 1786.
Daniel Rutherford	Born 3rd November, 1749. R.K. 20th December, 1786. Died 15th December, 1819.
Robert Graham	Born 7th December, 1786. R.K. 31st January, 1820. Died 7th August, 1845.
John Hutton Balfour	Born 15th September, 1808. R.K. 8th November, 1845. Retired, 1880. Died 11th February. 1884.
Alexander Dickson	Born 21st February, 1836. R.K. 28th April, 1880. Died 30th December, 1887.
Isaac Bayley Balfour	Born 31st March, 1853. R.K. 5th April, 1888. Retired, 5th April, 1922. Died 30th November, 1922.
William Wright Smith	Born 2nd February, 1875. R.K. 21st April, 1922.

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* This is the date of a Royal Warrant from William III., and no earlier one has been found.

Principal Gardeners (P.G.) from the Year 1756.

(The names of those preceding Williamson are not yet known.)

John Williamson	P.G. 1756? Died September, 1780.
Malcolm M'Coig	P.G. 1st January, 1782? Died 25th February, 1789.
Robert Menzies	P.G. 1st October, 1789. Died 22nd January, 1800.
John Mackay	Born 25th December, 1772. P.G. February, 1800. Died 14th April, 1802.
George Don	Born October, 1764? P.G. 1st October, 1802. Resigned 31st December, 1806. Died 15th January, 1814.
Thomas Sommerville	Born 1783? P.G. 1807? Died 17th March, 1810.
William M'Nab	Born 12th August, 1780. P.G. April 1810. Died 1st December, 1848.
James M'Nab	Born 25th April, 1810. P.G. 1st January, 1849. Died 19th November, 1878.
John Sadler	Born 3rd February, 1837. P.G. 13th January, 1879. Died 9th December, 1882.
Robert Lindsay	Born 7th May, 1846. P.G. 3rd March, 1883. Retired 31st March, 1896. Died 24th September, 1913.
Adam Dewar Richardson	Born 12th September, 1857. P.G. 1st April, 1896. Resigned 31st May, 1902.
Robert Lewis Harrow	Born 26th March, 1867. P.G. 1st June, 1902.

Features of the Garden.

THE method through which the Garden was built up by successive additions resulted in an absence of combination between its several parts, in great measure a consequence of want of adequate funds to make the necessary alterations in the grounds. During the past thirty-five years, in which the Garden has been wholly under the administration of the Commissioners of H.M. Works, the bringing about of this combination has been in progress. The work is not yet completed, and the Plan of the Garden which is attached to this sketch shows the area of the Garden as it is laid out at this date—November 1924. Future editions will show further changes as the work of reconstruction proceeds.

From its foundation the Botanic Garden has been devoted to the teaching of Botany, and its usefulness in this respect has determined the laying out of its area.

Herbaceous Garden.—A considerable space is occupied by a collection of herbaceous plants arranged for study in natural orders.

Rock Garden.—There is an extensive rockwork upon which alpine and rarer herbaceous plants are cultivated.

Arboretum.—The whole of the western area of the Garden is in process of arrangement as an Arboretum of trees and shrubs, and the positions of some of the chief genera are indicated on the plan. The Coniferæ are now placed in the ground adjacent to the Rock Garden.

Herbaceous Border.—Along the North Boundary of the Arboretum a mixed Herbaceous Border has been placed.

The **Plant-Houses** are still in process of reconstruction. So far as they have been rearranged at the present time they consist of a long range to the north of the herbaceous collection, composed of a Central Green-house **(C)**, from the sides of which two Corridors run east and west. In the Entrance Porch **(D)** to the Central Green-house is a collection of Insectivorous Plants. From the Eastern Corridor two houses project to the south—one **(A)** occupied by plants of Dry Regions, the other **(B)** containing

Economic Plants of both Tropical and Temperate Regions. Ending the Corridor is a house **(AA)** occupied by Rhododendrons and other Temperate Shrubs and Trees; opening from it are houses **(BB** and **CC)** in which an indoor rockery has been built for Rock Plants which do not thrive in the open. To the south side of the Western Corridor are attached two houses—one **(E)** for Orchids and one **(F)** for Plants of Tropical and Warm Regions. The western end of the Corridor opens into a domed house **(G)** for Ferns of Tropical Regions which are planted out, and attached to it are two houses running southwards, one of which **(H)** is occupied by Tropical Plants, and the other **(I)** is used for Heaths and Hardwooded Plants. From the northern wing of this domed house opens a house **(J)** devoted to monocotylous Plants of Tropical and Warm Regions, specially Aroids, Scitamineæ, Liliaceæ, and Amaryllidaceæ. Out of this opens the house **(K)** for Bromeliads; and in another house **(L)** opening from this are Pitcher Plants. Behind the western end of the Front Range there is a Temperate House **(M)** for Palms, Tree-Ferns, and Coniferæ, and a Palm-House **(N)**.

Adjoining Inverleith Row is a group of buildings including the **Museum (O)**, the **Laboratories (P)**, the **Lecture Hall (Q)**, the **Library (R)**, and the **Office (Y)**, for transaction of business with the public.

The **Museum** contains a series of exhibits illustrating the form and life-history of plants, and these are arranged so as to facilitate their use in teaching.

The **Library** contains over seventeen thousand volumes. The leading botanical and horticultural periodicals are taken and may be consulted like the other books by the public. Books are not lent from the Library.

Herbarium.—In the southern portion of the Garden is the Herbarium (S). It contains a fair representation of the Floras of the world.

Ladies' Cloak-Rooms are at (T) and (T). **Gentlemen's Lavatories** will be found at (V) and (V).

From the higher ground of the Arboretum—at the point marked (X) on the plan—a fine panoramic view of the City of Edinburgh, flanked on the east by Arthur's Seat, and on the west by the Pentland Hills, is obtained.

Teaching in the Garden.

In the year 1892 the Board of Agriculture, then recently established in England, assigned a small grant to the Royal Botanic Garden towards the institution of a Course of Instruction in the Sciences underlying the Practice of Horticulture and Forestry for the benefit of young men and women desiring to become Gardeners and Foresters. The fact deserves record, because it marks the introduction in Scotland of a systematised effort to provide scientific instruction to practical men in Gardening and Forestry.

The Course of Instruction has been carried on since. The following schedule—copies of which may be obtained by application to the Regius Keeper—indicates the terms upon which young men and women are at present admitted to the Course :—

Admission of Probationers.

1. The First Commissioner of His Majesty's Works is willing to consider applications from young men and women intending to become Gardeners or Foresters who may wish to serve for a period in the Royal Botanic Garden, Edinburgh.

2. The number of young men and women who can be so admitted is limited.

3. Such entrants will be in the position of Probationers, as a special class in the service of the Garden. Their work will be such as may be assigned to them, and they will work under all the regulations in force in the Garden.

4. Applicants must be unmarried and not over 25 years of age.

5. Each Applicant must furnish a medical certificate of fitness and a recommendation and certificate of character from a person of position to whom the Applicant is well known, and if the Applicant is or has been previously in a situation, a certificate from the present or last employer must be forwarded. Applicants who have had practical experience in Gardening or Forestry must state the amount of this and also if they have had experience of cultivation of plants under Glass.

6. Probationers will have the opportunity of attending a Course of Instruction in the Sciences underlying the practice and

the principles of Horticulture and Forestry free of charge, and they must attend the course, and also use the Library and Reading Room of the Garden. The subjects of Instruction, which are arranged in a curriculum extending over from two and a half to three years, are :—Botany, Chemistry, Entomology, Geology, Meteorology, Physics, Surveying and Mensuration, Field Engineering, Bookkeeping, Horticulture, and Forestry, and these are taught practically as far as possible.

7. At the conclusion of the Course of Instruction the Probationer will in ordinary course give place to a new entrant.

8. Any Probationer who does not show satisfactory progress in studies, or who does not give satisfaction otherwise, will be removed.

9. A grant in aid (subsistence allowance) will be given to each Probationer. The amount given to a Probationer at admission will depend upon his or her age, experience and capacity. The minimum will be at the rate of ten shillings a week, and the maximum at the rate of twenty-one shillings a week. In addition there is at this date (1924) a war bonus. Probationers who receive at entrance less than the maximum may, after admission, receive increments in relation to fitness and merit alike in the work of the Garden and in the Course of Instruction.

10. Holiday leave to the amount in all of eight working days in the year, in addition to Christmas Day, New Year's Day, Victoria Day, Spring and Autumn Holidays, is allowed after six months' service.

11. Probationers may be called upon to work on Sundays, and will receive remuneration for such work on a recognised scale.

12. Men Probationers will wear when at work a grey flannel shirt with turn-over collar of the same material, and a blue serge suit of clothes; in the Glass and Herbaceous Departments an apron after pattern at the Garden must be worn.

13. Applicants must distinctly understand that the times of duty of Probationer are such as may be necessary, that admission as a Probationer is only an ordinary weekly hiring subject to a week's notice from any day, and subject to instant dismissal in case of misconduct, with subsistence allowance up to date of dismissal only, and does not entitle to any superannuation or to any compassionate or other allowance at the termination thereof,

excepting such allowance or gratuity as might be awarded under the Superannuation Act, 1887 (Secs. 1 and 4), or any Act or Acts amending the same. Further, in the event of any injury happening to a Probationer in respect of which compensation would be payable under the Workmen's Compensation Act, 1906, any such pay which may be granted will be inclusive of such compensation payable under the Act in question, and an amount equivalent to such compensation will be deducted from any payment to dependants should the injury terminate fatally.

14. Young men or women desiring admission as Probationers must fill up, in their own handwriting, the form below, and return this paper addressed to

THE REGIUS KEEPER,
ROYAL BOTANIC GARDEN,
EDINBURGH.

15. Applicants will be informed if their names have been entered for admission, and on a vacancy occurring will receive notice thereof. Should there be no vacancy within six months from the date of application, it must be renewed if the Applicant still desires to work as a Probationer in the Royal Botanic Garden. If not renewed, the applicant's name will be removed from the waiting list.

16. The First Commissioner desires to impress upon applicants that he grants this privilege in the expectation that Probationers will earnestly endeavour to make use of and profit by the opportunities of acquiring knowledge placed within their reach, and will recognise that it is incumbent upon them at the same time to perform with zeal the duties assigned to them.

Form to be filled up by Applicants for Admission as Probationers in the Royal Botanic Garden, Edinburgh.

Name of Applicant
Address
Date of Birth
Birthplace
Forester or Gardener
Name and address of present (or last) employer
Length of time in present situation

Previous situations and length of time in each (Gardeners to state amount of their experience in cultivation of plants under Glass)

*Signature of Applicant*________________

*Date*________________

Lectures to the Public.

The Regius Keeper from time to time gives lectures which are open to the public.

Research.

The **Laboratories** are open to anyone desirous of undertaking Botanical Research.

Specimens for Private Study.

Specimens for private study are supplied, as far as the resources of the Garden will permit, to visitors, teachers, and students who make written application to the Regius Keeper. Application forms may be obtained at the office of the Garden.

Plants and Seeds are not Sold from the Garden.

Publications.

In 1900 appeared the first number of *Notes from the Royal Botanic Garden, Edinburgh,* for the purpose of publishing reports upon the condition and progress of the Garden, records of scientific investigations carried on in the Garden, and notices of matters of interest relating to plant-life which have come under the observation of the Staff. The *Notes* are available in exchange for publications of kindred institutions, and are on sale at the gates of the Garden and may be purchased either directly or through any Bookseller from H.M. Stationery Office (Scottish Branch), 120 George Street, Edinburgh. The parts are not issued at fixed periods. Fourteen volumes have been completed.

A short descriptive *Sketch of the Garden* may be purchased at the gates.

A **Seed List** containing the names of the plants cultivated from which seeds have been collected during the year is published in December. The seeds are available for exchange.

Botanical Department
of the
University of Edinburgh.

DURING nearly two centuries the offices of Regius Keeper of the Royal Botanic Garden and Professor of Botany in the University of Edinburgh have been held by the same person, and it has become the custom that the students of the University come to the Garden for instruction in Botany. The whole work of the Botanical Department of the University is carried out in the Garden by the University Staff, which at this date is constituted as follows :—

Professor of Botany . . .	William Wright Smith, M.A., F.L.S., F.R.S.E.
Reader in Mycology and Bacteriology	Malcolm Wilson, D.Sc., F.L.S., F.R.S.E.
Lecturer on Forest Botany and Indian Forest Trees . . .	James Lindsay Salmond Smith, M.A., B.Sc.
Lecturer on Botany	James Robert Matthews, M.A., F.L.S., F.R.S.E.
Lecturer on Plant Physiology and Agricultural Botany	Robert James Douglas Graham, M.A., D.Sc., F.R.S.E.

Enumeration of Visitors to the Royal Botanic Garden, Edinburgh, during the Years 1889-1923.

On the 1st of April 1889, the control of the Royal Botanic Garden, Edinburgh, was vested in the Commissioners of His Majesty's Works, and the Garden became subject to the "Act for the Regulation of the Royal Parks and Gardens, 1872." From the date specified the Garden has been opened to the public on Sundays, and also for an extended period on Week-days. The table below shows the number of visitors to the Garden on Sundays and Week-days respectively during the thirty-five years which have elapsed since the Garden was transferred to the Commissioners of His Majesty's Works :—

Year.	Total in Year.	Total on Sundays.	Largest Number on a Sunday.	Smallest Number on a Sunday.	Total on Week Days.	Largest Number on a Week Day.	Smallest Number on a Week Day.
*1889 ...	368,219	187,457	13,935	129	180,762	3,834	50
1890 ...	446,540	216,345	11,262	91	230,195	4,032	65
1891 ...	454,083	220,543	9,445	340	233,540	3,228	76
1892 ...	437,205	218,233	13,581	149	218,972	2,666	43
1893 ...	531,232	271,893	12,860	45	259,339	3,197	40
1894 ...	526,948	268,793	13,515	68	258,155	3,153	28
1895 ...	516,608	264,497	15,227	127	252,111	5,292	26
1896 ...	516,407	296,576	13,517	527	219,831	3,825	30
1897 ...	475,210	271,730	16,001	74	203,480	3,153	20
1898 ...	443,289	258,449	12,840	123	184,790	3,234	39
1899 ...	461,686	259,424	15,161	105	202,262	2,758	30
1900 ...	561,359	324,856	17,700	268	236,503	3,667	53
1901 ...	586,461	339,229	19,256	258	247,232	4,627	45
1902 ...	522,363	295,892	15,561	165	226,471	5,461	60
1903 ...	606,184	355,310	19,583	135	250,874	4,202	41
1904 ...	639,066	367,290	20,719	374	271,776	3,564	42
1905 ...	584,546	330,995	19,859	100	253,551	2,708	60
1906 ...	699,558	394,030	21,959	84	305,528	3,760	44
1907 ...	674,208	422,899	25,601	708	251,309	3,365	40
1908 ...	585,171	342,106	20,549	570	243,065	2,898	39
1909 ...	683,243	394,861	24,334	165	288,382	3,483	71
1910 ...	777,864	430,776	21,813	244	347,088	3,598	80
1911 ...	708,943	420,163	22,765	82	288,780	3,828	66
1912 ...	714,170	383,476	25,930	88	330,694	3,515	81
1913 ...	876,585	500,205	27,398	680	376,380	4,100	59
1914 ...	776,280	414,518	25,521	106	361,762	5,337	62
1915 ...	730,761	442,179	21,155	125	288,582	3,827	55
1916 ...	695,364	367,713	20,227	98	327,651	3,926	41
1917 ...	737,070	428,752	21,531	170	308,318	3,293	59
1918 ...	727,782	320,450	20,811	236	407,332	3,911	39
1919 ...	811,937	436,055	21,775	231	375,882	6,274	52
1920 ...	644,856	399,398	19,340	481	245,458	3,777	84
1921 ...	702,481	418,832	20,892	797	283,649	4,027	48
1922 ...	816,272	369,636	23,979	519	446,636	3,741	71
1923 ...	782,175	427,155	22,424	549	355,020	4,849	108
Total for Thirty-five Years	21,822,126	12,060,766	...	...	9,761,360	...	...

* Numbers in this year for nine months only.

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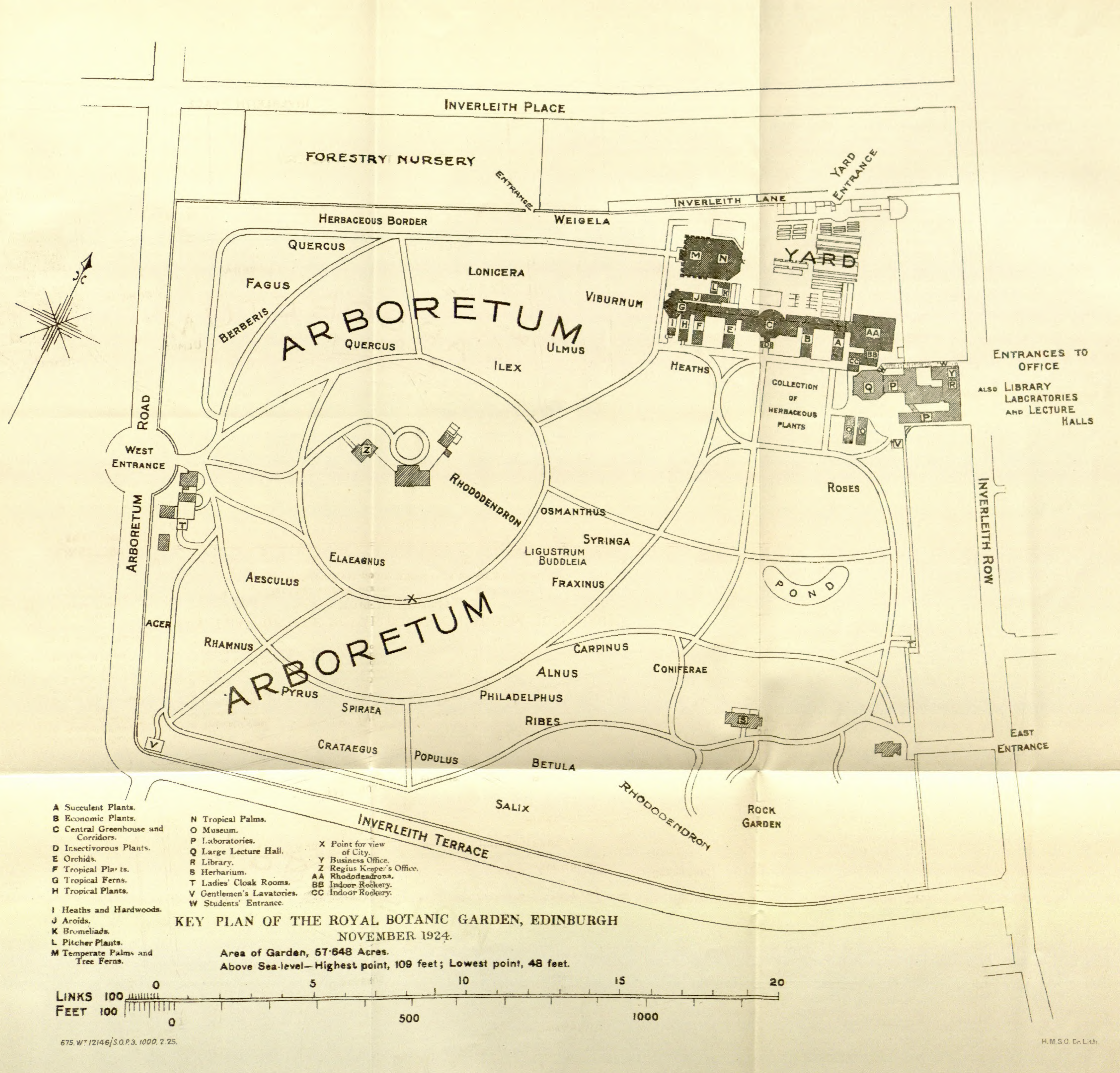
INVERLEITH PLACE
FORESTRY NURSERY
ENTRANCE
YARD ENTRANCE
INVERLEITH LANE
HERBACEOUS BORDER
WEIGELA
YARD
M
N
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J
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C
D
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A
AA
BB
CC
QUERCUS
FAGUS
BERBERIS
ARBORETUM
QUERCUS
LONICERA
VIBURNUM
ULMUS
ILEX
HEATHS
COLLECTION OF HERBACEOUS PLANTS
Q
P
Y
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P
O
O
V
ENTRANCES TO OFFICE
ALSO LIBRARY LABORATORIES AND LECTURE HALLS
ROAD
WEST ENTRANCE
ARBORETUM
Z
RHODODENDRON
OSMANTHUS
SYRINGA
LIGUSTRUM
BUDDLEIA
FRAXINUS
ELAEAGNUS
AESCULUS
T
ROSES
INVERLEITH ROW
POND
X
ARBORETUM
ACER
RHAMNUS
PYRUS
SPIRAEA
CARPINUS
ALNUS
CONIFERAE
PHILADELPHUS
RIBES
S
V
CRATAEGUS
POPULUS
BETULA
EAST ENTRANCE
SALIX
RHODODENDRON
ROCK GARDEN
INVERLEITH TERRACE
LINKS 100
0
5
10
15
20
FEET 100
0
500
1000

A	Succulent Plants.
B	Economic Plants.
C	Central Greenhouse and Corridors.
D	Insectivorous Plants.
E	Orchids.
F	Tropical Plants.
G	Tropical Ferns.
H	Tropical Plants.
I	Heaths and Hardwoods.
J	Aroids.
K	Bromeliads.
L	Pitcher Plants.
M	Temperate Palms and Tree Ferns.
N	Tropical Palms.
O	Museum.
P	Laboratories.
Q	Large Lecture Hall.
R	Library.
S	Herbarium.
T	Ladies' Cloak Rooms.
V	Gentlemen's Lavatories.
W	Students' Entrance.
X	Point for view of City.
Y	Business Office.
Z	Regius Keeper's Office.
AA	Rhododendrons.
BB	Indoor Rockery.
CC	Indoor Rockery.

KEY PLAN OF THE ROYAL BOTANIC GARDEN, EDINBURGH
NOVEMBER 1924.

Area of Garden, 57·648 Acres.
Above Sea-level—Highest point, 109 feet; Lowest point, 48 feet.

675. Wt 12146/S.O.P.3. 1000. 2.25.
H.M.S.O. Cr. Lith.